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Winter Work for Lake Shipyards.

CONTRACTS FOR SHIPS COSTING $3,187,600—STEEL FREIGHT CARRIERS ARE ALL OF 6000-TON TYPE—QUADRUPLE EXPANSION ENGINES AND WATER-TUBE BOILERS.

Contracts already placed with lake ship builders for winter work provide for eighteen vessels—eleven steam and seven sail—aggregating in value $3,187,600. All but four of the vessels are to be of steel. There are fourteen freight carriers, two revenue cutters for the United States government, one side-wheel passenger steamer and a large ocean tug. The fourteen freight carriers will have a combined capacity of 72,900 gross tons on 17 feet draft. They are evenly divided—seven steamers and seven tow barges. The four wooden vessels are all to be built by James Davidson of West Bay City, and alike to a big fleet of wooden ships which he has built during two or three years past, will undoubtedly be operated by him, as no purchasers have been found of late for new wooden craft. Two of the Davidson vessels are to be steamers and two schooners, and all practically the same size, 312 to 315 feet over all.

Particulars of the steel freight vessels show how well lake builders are keeping up with the best practice of the world. Nearly all of the steel vessels will be capable of moving 6,000 gross tons (6,720 net tons) on 17 feet draft, and two of them will carry cargoes of 7,000 gross tons. Two of the steamers will be fitted with quadruple expansion engines, capable of developing 2,500 to 2,700 horse power, and three of them will have Babcock & Wilcox water tube boilers furnishing steam at 250 pounds pressure.

A Problem for the Soft Coal Shippers.

Although 606,461 tons of soft coal was moved through the Sault canals to Lake Superior during October, the canal records of shipments from the opening of navigation to Nov. 1 show a total of only 1,752,283 tons, against 2,315,437 tons on the same date in 1896, or a shortage of 563,154 tons. It is quite probable that in shipments to Lake Michigan ports the shortage is fully equal to that shown in the Lake Superior movement. The soft coal dealers realize now, more than ever, that the problem of forwarding enough coal by lake to meet demands of the northwest is a very difficult one. Within the past week they have been convinced that they will be at a big disadvantage on account of the scarcity of ore and grain cargoes, and they will probably have to face a very strange condition in the lake trade—that of bidding up rates to induce vessels to come down the dition has not been reached as yet, but vessel owners have given up all lakes light in order to increase the upward movement of coal. This conhope of any profit in grain or ore freights for the balance of the season, and if the coal that is needed at upper lake ports is to be moved it would seem that the shippers must undertake extreme measures. They have managed, thus far to move a large quantity of coal and hold rates down by agreeing on the freights to be paid, but it would seem that they will be forced to bid higher for tonnage from this time on.

The canal statistics, which were telegraphed to the Review, show a total freight movement to and from Lake Superior of 16,393,726 net tons on Nov. 1, as compared with 14,539,968 tons on the same date a year ago.

Vessels under Contract in Lake Ship Yards.

BUILDERS.	TYPE OF VESSEL.	DIMENSIONS. OVER ALL	KEEL	BE'M	DPTH	CAPACITY gross tons 17 FEET DRAFT.	APPROXIMATE VALUE.	ENGINES. DIMENSION OF CYLINDERS AND STROKE.	BOILERS—NUMBER, DIMENSIONS AND PRESSURE.	BUILDING FOR
American St'l Barge Co., West Superior	Steel frt. stmr.	.....	414	50	27	5,900	$230,000	Quadruple; sizes not fixed.	2, B & W watertube, 250	American Steel Barge Co.
American St'l Barge Co., West Superior	Steel tow barge.	390	376	46	26	5,600	140,000	.....	.....	Minnesota Steamship Co.
Chicago Ship Bldg. Co., Chicago.	Steel frt. stmr.	420	400	48	28	5,100	210,000	21, 30½, 44, 64 x 42.	Two, 14-8 x 11-6, 200.	C. W. Elphicke, Chicago.
Chicago Ship Bldg. Co., Chicago.	Steel tow barge.	388	376	48	26	5,750	140,000	.....	.....	James Corrigan, Cleveland
Cleveland Ship Bldg. Co., Cleveland.	Steel frt. stmr.	426	406	50	28	5,750	220,000	Quadruple; sizes not fixed.	2, B & W watertube, 250	Cleveland-Cliffs Iron Co., Clevel'd.
Cleveland Ship Bldg. Co., Cleveland.	Steel frt. stmr.	450	430	50	28	6,000	235,000	Quadruple; sizes not fixed.	2, B & W watertube, 250	A. B. Wolvin, Duluth.
Detroit Dry Dock Co., Detroit.	Paddle pass. stmr.	324	314	44*	18	.....	375,000	Beam, 80 in. l. p. x 12 ft.	Six, 12½ x 12½, 135.	Cleveland & Buffalo Trans. Co.
Globe Iron Works Co., Cleveland.	Steel rev. cutter.	205	188	32	17	.....	193,800	25, 37½, 56¼ x 30.	Four, 11-8 x 10, 160.	U. S. Revenue Cutter Service.
Globe Iron Works Co., Cleveland.	Steel rev. cutter.	205	188	32	17	.....	193,800	25, 37½, 56¼ x 30.	Four, 11-8 x 10, 160.	U. S. Revenue Cutter Service.
Globe Iron Works Co., Cleveland.	Steel tow barge.	388	376	44	26	5,400	135,000	.....	.....	Mack-Becker fleet.
Wheeler F. W. & Co, West Bay City.	Steel frt. stmr	475	452	50	28	6,100	255,000	26, 37½, 55, 80 x 42.	Four, 13-4 x 11-6, 200	Bessemer Stmshp Co., Cleveland.
Wheeler F. W. & Co., West Bay City.	Steel tow barge.	450	434	50	28	7,000	155,000	.....	.....	Bessemer Stmshp Co., Cleveland.
Wheeler F. W. & Co., West Bay City.	Steel tow barge.	450	434	50	28	7,000	155,000	.....	.....	Bessemer Stmshp Co., Cleveland.
Wheeler F. W. & Co., West Bay City.	Steel tug.	156	143	28	17	.....	120,000	20, 32½, 55 x 36.	Two, 12-6 x 12, 180.	Brown & Co., Pittsburg.
Davidson, James, West Bay City.	Wooden frt. stmr.	315	300	44	26	3,150	135,000	16, 28, 42 x 36.	13 x 12 ft.	Builders' account.
Davidson, James, West Bay City.	Wooden frt. stmr.	315	300	44	26	3,150	135,000	16, 28, 42 x 36.	13 x 12 ft.	Builders' account.
Davidson, James, West Bay City.	Wooden tow barge.	312	300	45½	26	3 500	80,000	.....	.....	Builders' account.
Davidson, James, West Bay City.	Wooden tow barge.	312	300	45½	26	3,500	80,000	.....	.....	Builders' account.

* Over guards, 78 feet.

The two vessels that are to have quadruple expansion engines but not water tube boilers, will have Scotch boilers constructed to withstand a working pressure of 200 pounds.

All figures excepting valuations in the accompanying table are from the builders or owners of the vessels. The values are somewhat above actual cost in each case, but they are close enough to the correct figures to serve the purpose of arriving at the approximate total value of the new fleet. It is understood, of course, that the list does not include several tugs and other small craft that are to be built during the winter in different parts of the lakes.

Two Paddle Steamers—Ship Yard Matters.

It would seem that after a great deal of talk for two years past about new passenger steamers, the Richelieu & Ontario Navigation Co. is about to close contracts for two vessels—side-wheel type—with the Bertram Engine Works of Toronto, although the details are not as yet fully arranged. The vessels will be duplicates, 277 feet over all, 61 feet beam over guards and 14 feet depth. There will be 140 state-rooms with sleeping capacity in rooms and in other apartments for 428 passengers in all. The full passenger capacity will be about 1,500. Engines are to be inclined treple expansion, taking steam from four Scotch boilers.

Tonnage of the tug Wm. H. Brown, recently launched by F. W. Wheeler & Co. of West Bay City, is 470.97 gross and 320.27 net.

Australia is the name selected for the new steel tow barge building at South Chicago for James Corrigan of Cleveland.

The Cramp-built engines which the Cleveland Tug Co. is to put into a new steel tug hull during the winter have cylinders of 26 and 53 inches diameter by 48 inches stroke.

The J. L. Colby and whaleback barge No. 116 have been in dock for hull repairs at West Superior during the past week.

The Buffalo local board of steamboat inspectors have suspended for one year the licenses of Capt. McCrea of the excursion steamer Gazelle, and Capt. Moore of the steam yacht Glance, for the part they took in sinking the Glance, Sept. 28, and the drowning of Engineer Dilliott. The charge was that both were going too fast in a narrow channel.

This is a gain of nearly 2,000,000 tons in the freight movement, although the number of vessel passages shows a decrease of 1,698. This is the effect of deep water and big vessels. The vessel passages, registered tons and freight tons are shown in the following table:

	VESSEL PASSAGES.	REGISTERED TONS.	FREIGHT TONS.
To Nov. 1, 1897.....	15,355	15,788,994	16,393,726
To Nov. 1, 1896.....	17,053	15,787,927	14,539,968

Contrary to expectations, grain shipments are not equal to the shipments of 1896. The wheat movement aggregates 41,284,034 bushels, as compared with 52,107,888 bushels on Nov. 1, 1896. Flour shipments, however, are about 300,000 barrels in excess of the shipments to Nov. 1, 1896. A summary of the principal freight items in the commerce of both canals follows:

MOVEMENT OF PRINCIPAL ITEMS OF FREIGHT TO AND FROM LAKE SUPERIOR.

ITEMS.	To Nov. 1, 1897.	To Nov. 1, 1896.	To Nov. 1, 1895.
Coal, anthracite, net tons.....	444,258	349,929	354,414
Coal, bituminous, net tons.....	1,752,283	2,315,437	1,859,818
Iron ore, net tons.....	9,879,341	7,459,264	7,543,207
Wheat, bushels.....	41,284,034	52,107,888	28,900,614
Flour, barrels.....	7,145,116	6,841,632	7,236,732

Hard coal shipments from Buffalo during October aggregated 409,313 net tons, compared with 374,577 tons in October, 1896. Receipts of flour and grain at the same port from the opening of navigation to Nov. 1 are, of course, largely in excess of all previous years. The figures to Nov. 1, 1896, and to Nov. 1, 1897, are: Flour, 1897, 9,434,567 barrels; 1896, 7,531,274 barrels; all grain, 1897, 156,174,509 bushels; 1896, 128,899,210 bushels; flour and grain 1897, 203,347,344 bushels; 1896, 169,359,753 bushels.

PASSING SIGNALS IN FOG.

A CORRESPONDENCE SHOWING HOW THOROUGHLY THE CHIEF OF THE STEAMBOAT INSPECTION SERVICE ENTERS INTO A DEFENSE OF THE AFFAIRS OF HIS OFFICE WHEN THEY ARE CRITICIZED.—INTERESTING LETTERS.

Last week the Review published a letter that had been addressed to Gen. Dumont, chief of the steamboat inspection service, by Geo. L. McCurdy of Chicago. The letter criticised the manager in which this branch of the government had dealt with the "White law." It was charged in substance that certain circulars on this subject sent out from Washington were encumbered with a mass of rules and regularities not applicable to the lakes, and that local inspectors on the lakes were still giving out copies of a circular dated Feb. 28, 1894, which contained a resolution of the board of supervising inspectors prohibiting the use of passing signals when vessels were not in sight of each other. The publication of this letter in the Review has brought out a request from Gen. Dumont that all of the correspondence be published. The space required is more than we care to give up to the subject, but it is only just that the request should be complied with, and the letters are, anyhow, quite interesting to vessel owners and vessel masters. They are as follows:

Editor Marine Review:—I notice in this weeks' issue of your paper that you print a letter recently sent to this office by Mr. McCurdy of Chicago, evidently furnished by that gentleman, an action on his part that I have no intention of finding fault with, but I do think that his publishing that letter, without publishing the preceding correspondence leading up to it, is not in strict accord with the amenities usually prevailing in such cases. To supply Mr. McCurdy's omissions referred to, I have to request, in justice to this office, that you will publish the whole of the correspondence between Mr. McCurdy and myself in your next issue, including his letter published in this week's issue. Enclosed find copies of Mr. McCurdy's letter to this office of Oct. 16 and its answer of the 18th inst.; also its answer dated Oct. 27, to his letter published in your columns, dated the 23rd inst. (not 22nd), which was received here the 26th inst. and answered the next day.

The only thing I care to say in conclusion is, that it is my opinion of the lake masters and pilots, founded upon a large personal acquaintance, that no brighter, more intelligent, or more capable navigators exist upon any inland waters of the world than they; and that Mr. McCurdy's criticism thereof, that those officers not being "lawyers" were unable to determine the rules governing navigation on the lakes, published in circular No. 36, dated Feb. 28, 1895, because said circular contained matter irrelevant thereto, is about as appropriate as would be a similar criticism of a schoolmaster, who gave a copy of the bible to an intelligent scholar twelve years of age, to read therefrom the 10th chapter of Genesis, as being "a grave mistake" on the part of the schoolmaster, to "ask" the boy, though bright and intelligent, "at his peril to separate" and read the chapter given him, the holy book containing a mass of matter irrelevant thereto, because the boy was not a "minister of the gospel."

I enclose copy of circular of 1895 criticised by Mr. McCurdy, calling attention to the fact that the rules published for harbors, bays and rivers, and for western rivers, were necessarily modified by the passage of the "White law," therefore the publication of the pilot rules for all waters; and, notwithstanding the fact that there were at least 22,000 masters, mates and pilots interested in the changes made in the rules of navigation for all waters, the only fault that has been found with the manner of the publication of the changes made comes from a gentleman who makes no claim whatever of being either a master, mate or pilot, and can only find a reason for criticism over two and a half years from the date of its publication.

JAMES A. DUMONT,
Supervising Inspector-General.

Treasury Department, Steamboat Inspection Service, Office of the Supervising Inspector-General, Washington, D. C., Oct. 30, 1897.

The original letter from Mr. McCurdy was not, as General Dumont says, published in the Review. It is probably unfortunate that it was not published, as a copy of it was at hand, and might have been used, but it was thought that the ground was fully covered by the letter that was used. Failure to publish this letter probably gave rise to the thought that it was purposely withheld. It follows with subsequent correspondence, including the letter that appeared in the Review of last week, this latter being reprinted also on account of Gen. Dumont's request.

Hon. Jas. A. Dumont, Supervising Inspector-General, Washington, D. C.—Dear Sir: Your letter of August 13, 1897, to the Detroit Free Press, pointing out that passing signals in a fog, mist or falling snow are clearly permissible under the rules of navigation governing on the great lakes and their connecting waters, came to my attention through the papers. In reading the rules quoted by you, I became impressed with the fact that they are not quite clearly understood by some of the local inspectors and some of the masters.

I represent the underwriters on a goodly percentage of the tonnage of the lakes, and feel it is of first importance that the greatest safeguards should be used to prevent collisions. I am sure you will agree with me that no rules can be of any practical benefit until they are clearly understood by those supposed to act in accordance with them. A master must know the rules, and have confidence that others understand them as he does before he can navigate with confidence and promise of safety. I have taken occasion to interview numerous masters and practical navigators, and have found that the general opinion is that, in the crowded navigation of the lakes, carried on in narrow lines even through the widest parts of the lakes, it is considered necessary to have passing signals to decrease the number of collisions. It is stated to me that large fleets of vessels pass both up and down through a fog that will lie for days in a particular locality. Some of these vessels have long tows astern, and it would seem to be impossible for such boats to stop when there is any wind blowing. Again, the spring and fall navigation is complicated by frequent and severe snow storms, accompanied by heavy gales and large seas, in which vessels dare not stop, if they could. Vessels running before such a gale in our narrow paths of commerce must meet vessels going in the opposite direction and needing all of their power and speed to keep headed up and out of the troughs of the sea.

I offer these suggestions, which have come to me in defense of such right to signal, in the hope that you will kindly order that the supervisors and local inspectors on the lakes will cease their attacks on the controlling laws, and give their aid to the establishing of that confidence in the wisdom of our laws, which is necessary to insure the strictest compliance therewith. So far as I can learn, the trouble has not been with the law or the masters so much as with the information that our masters state they have received. I respectfully call your attention to the following:

Some of the lake captains and pilots say that when getting their licenses they have been furnished with a circular which has informed them contrary to the provisions of the "White law," as they understand it, and to that fact lay the confusion that has existed. This circular purports to come from your office and to be over your official signature, and the instructions therein given seem at variance with the so-called "White law." The circular may never have been originally intended for circulation on the lakes, but when it has been given out to masters and pilots, it is not to be wondered at that they consider it as given for their guidance. The first part of such circular is as follows:

"RESOLUTION RELATING TO, AND AMENDMENTS TO, PILOT RULES.

1894.
Department No. 36.

Treasury Department,
Steamboat Inspection Service,
Office of the Supervising Inspector-General.
The Maltby Bldg., N. J. Ave. and B. St., NW.
Washington, D. C., Feb. 28, 1894.

"To Masters and Pilots of Steam Vessels:—Your attention is directed to the following resolution of the board of supervising inspectors, approved by the secretary of the treasury, regarding the misuse of the whistle signals for steamers passing each other authorized by pilot rules, lakes and seaboard, also for western rivers:

"Resolved, That pilots of steam vessels be instructed, through the local inspectors of steam vessels when licenses are being issued to such pilots, either originals or renewals, that the signals provided in pilot rules, lakes and seaboard, and western rivers, for steamers meeting, passing or overtaking, are never to be used except when steamers are in sight of each other and the course and position of each can be accurately determined, in the day time, by a sight of the vessel itself, or at night, by its signal lights. In fog, mists or falling snow, when vessels cannot see each other, fog signals only may be lawfully given, and pilots should, upon hearing the fog signal of another vessel ahead, or on either bow, run slow, with frequent stoppages, until the fog signals of the opposing vessel are heard abaft the beam; and further

"Resolved, That these resolutions be printed in a foot note on the pilot rules, when new editions are printed, and also in circular form, to be presented by the local inspectors to each master and pilot, when issuing to him his license."

In view of the foregoing, which I beg you to believe is the result of an earnest impartial investigation, I trust that you will not consider it presumptuous in my respectfully petitioning that you will correct the misinformation which has gone forth and to which may already be due many of the great property losses that have occurred. If you are not in position to see that masters and pilots on the lakes are furnished with copies of the "White law," I will undertake such distribution at the expense of my companies, but it should be accompanied by a statement from you as to its governing in all cases, and your authority should be given for a statement that the above circular and any other instructions from local inspectors do not do away with the right to signal in a fog. If you will kindly consider this communication, particularly as regards the circular, I will see that your ruling as to this circular is at once called to the attention of the marine public.

GEORGE L. McCURDY.

Insurance Agency of George L. McCurdy,
Royal Insurance Bldg., Chicago, Oct. 16, 1897.

George L. McCurdy, Esq., Royal Insurance Building, Chicago, Ill.—Sir: I am in receipt of your communication in re the pilot rules and laws for the great lakes, and contents carefully noted. Referring to your suggestion and request that this office will "order that the supervising and local inspectors on the lakes will cease their attacks on the controlling laws," etc., would say that I would cheerfully comply with your request so far as any particular officers are concerned in such attacks, if there are such, upon being informed what particular officer or officers are making such attacks, if any, the statement in your letter being the only information I have on the subject, and such statement not being, in my judgment, sufficiently specific to warrant the issue of a general order.

In regard to the statements made to you by certain lake captains and pilots, that the inspectors are issuing to such officers copies of the circular of Feb. 28, 1894, would say that it is my opinion that the officers referred to are mistaken, as the issue of that circular was limited, and no copies have been sent to inspectors on the lakes since the passage of the "White law," approved Feb. 8, 1895. But as some inspector may have inadvertently issued the '94 circular since the "White law" went into effect, I have this day directed the supervising inspectors of the fifth, eighth and ninth districts to investigate the subject as to each of their local boards, and to stop the practice of which you complain, if such practice shall be found to exist.

Referring to the subject of masters and pilots being furnished with copies of the "White law," you are informed that in 1895 every master and pilot was furnished with a copy of the enclosed circular, No. 26, dated Feb. 28, 1895, at the time of receiving an original or renewal of license; besides that, every steamer is obliged to carry, and does carry, two copies of the pilot rules founded under the "White law." So, if there is any lack of information on the subject, it must be purely through negligence or indifference of those masters and pilots, if there are any, who profess to be ignorant of their duties under the existing laws.

JAMES A DUMONT,
Supervising Inspector-General.

Treasury Department, Steamboat Inspection Service, Office of the Supervising Inspector-General, Washington, D. C., Oct. 18, 1897.

To James A. Dumont, Supervising Inspector-General of Steam Vessels, Washington, D. C.—Dear Sir: Your esteemed favor under date of Oct. 18, 1897, was duly received. Upon addressing you again in regard to the rules of navigation for the great lakes, I feel that it is of import-

ance that you should first realize my aim and interest in the subject. We have a great many millions of dollars at risk on hulls and cargoes. and my whole and only object is to minimize the losses.

I understand that the purpose and aim of your department is to furnish all possible safeguards to navigation, and consequently I have felt it my privilege to approach you freely and offer any honest criticisms suggested by my experience, and to hope for your careful consideration of such criticisms with a view to obtaining the best results in the prevention of marine disasters. On account of my position, it would be embarassing for me to single out and point your attention to particular masters and inspectors, as suggested in your letter, but aside from my first communication, your published letter of August 13, 1897, would indicate your recognition of a confusion and the necessity of pointing out what rules govern on the lakes.

The newspaper reports of interviews with inspectors during the past summer, in addition to talks with masters, have impressed me with a full belief of the necessity of calling your attention to the matter. You express an opinion that your circular issued in February, 1894, (forbidding passing signals in a fog) has not been generally distributed. I would feel much relieved if you could ascertain that your opinion agrees with the fact, but I am well satisfied that you would learn differently upon a careful inquiry. It so happens that a representative of my office has this day reported that while aboard a large steamship this morning, for the purpose of inquiring as to a recent stranding accident, he was informed by the master and mate thereof that copies of the above circular, contradicting the White law, were given them with their renewal of licenses this spring. One claimed to have received his circular from the inspectors at Milwaukee and the other from Buffalo.

From your letter, I judge that you consider that your department has done its full duty by providing that in 1895 your circular of February 28th, 1895, should be furnished to masters and pilots with their licenses and renewals, and further providing that copies of pilot rules, founded on the White law, should be carried on steamers. We knew of these provisions, but I have not been impressed with this having in any sense met the requirements, and I most respectfully and earnestly invite and urge your consideration of the following suggestions:

First: The circular you distributed on the lakes in 1895 (and which I understand from your letter, shows just the extent that you have gone in posting lake masters as to the governing statutes) contains:

1. A lot of information as to acceptable life saving devices and other miscellaneous information and rules, relating to boiler testing, life boats, examinations, etc.

2. Then four pages of the circular are devoted to rules and regulations for the government of pilots, formulated by the supervising inspectors to apply on harbors, rivers and inland waters *exclusive* of the great lakes and their tributary and connecting waters.

3. Then comes extracts from Sec. 4233 of the revised statutes, being the act of 1864, which I understand is superseded by the act of 1895, so far as the lakes are concerned, so that your circular is loaded with obsolete rules. And that without even a note to call mariners' attention to that fact.

4. The circular then contains diagrams illustrating the requirements as to lights, etc., under this superceded act of 1864.

5. Then follows another set of fourteen inspectors' rules for pilots on the Red River of the North, and rivers whose waters flow into the Gulf of Mexico, and their tributaries.

6. Beginning at page 20 of the circular, I find the pilot rules formulated by your board to apply on the great lakes, and these are followed by an extract from the statute now governing.

From the foregoing it appears that the rules when handed to our lake masters and pilots by the inspectors under your direction were coupled and burdened with a confusing mass of rules and regulations not applicable to the waters these masters and pilots are navigating. When a man obtains his license as a navigator on the great lakes, why should he be given a set of rules for waters of which he knows and cares nothing? Why should he be called upon to decide that over two-thirds of the rules given him as a guide to his conduct, as a licensed pilot on the lakes, is mere surplusage? Why should any rules be given him that are exclusively for others?

Our masters are intelligent and skilled navigators, but not lawyers, and I consider it a grave mistake to furnish them with a combination of applicable and inapplicable rules and statutes, and ask them at their peril to separate and construe the rules by which their actions will be judged upon the happening of a disaster. I am further of the opinion that there is a mistake in furnishing these masters with only extracts from the law of 1895, instead of with the full text thereof. The act of congress provides "that the following rules for preventing collisions shall be followed, etc.;" and I cannot conceive why you should have eliminated from your circular so many of the rules which congress saw fit to incorporate in the act for preventing collisions. I find that while you have given the inspectors' rules in full you have eliminated statutory rules 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 27 and all but section 2 of rule 28. I do not grasp the reason for this and it would seem particularly pertinent, since the circular contains so much that is not law to masters receiving them, that their attention should have been challenged by an insertion of the repealing clause of the act of 1895, being section 4 of rule 28, which *provides "that all laws, or parts of laws, so far as applicable to the navigation of the great lakes and their connecting and tributary waters as far east as Montreal, inconsistent with the foregoing rules are hereby repealed."*

In consideration of all the foregoing, I cannot agree with your conclusion that "if there is any lack of information on the subject, it must be purely through the negligence or indifference of those masters and pilots, if there are any, who profess to be ignorant of their duties under the existing laws." In conclusion I must respectfully urge that you will, if possible, see that the licensed officers of the great lakes are furnished with unencumbered copies of exclusively the rules by which they are supposed to be governed. This matter is of so much importance to us that we are willing, at our own expense, to have a copy of the statutory and your pilot rules printed on large cards and distributed for posting, but you will readily understand why it would be preferable to have you do this from your department and require the posting. Trusting that our interests involved will appear to you as sufficient justification for the freedom of our remarks, and that you will kindly consider and weigh the above considerations.

Yours most respectfully,
GEO. L. McCURDY.

Insurance Agency of Geo. L. McCurdy,
Royal Insurance Bldg., Chicago, Oct. 22, 1897.

George L. McCurdy, Esq., Royal Insurance Building, Chicago, Ill.—Sir: I am in receipt of your letter of the 23rd instant. In regard thereto, would say that you are correct in assuming "that the purpose and aim of your (this) department (steamboat inspection service) is to furnish all possible safeguards to navigation," qualified, however, by the restrictions of the laws under which this particular department of the treasury department was created, as set forth in title LII, revised statutes, and subsequent amendments thereto, and to such parts of other statutes as may confer authority on it in particular cases, but not in general.

The act approved Feb. 8, 1895, discussed by you, comes under the latter classification, and the parts assigned therein for administration by this service are included wholly in rules 7 ,10, 14 (first paragraph); and 28 (section 3, 2nd paragraph), relating to "regulations to be observed in passing each other, not inconsistent with the provisions of" the act itself; the concluding provisions of the paragraph being that "two printed copies of any such regulations for passing, signed by them, shall be furnished to each steam vessel, and shall at all times be kept posted up in conspicuous places on board."

The board of supervising inspectors immediately upon the passage of the law, they having been kept in session for that purpose, performed their duty as required by the rule above quoted; and incidentally, and not as a duty under the law, added to such regulations certain extracts from the law, such as in their judgment would in a manner be explanatory of their rules, and showing the basis thereof. The rules referred to were at once printed, and each local board in the lake district were sent sufficient quantities to furnish two copies to each steamer in their districts. In addition thereto was sent the circular referred to in your letter. In addition to the promulgation of the rules referred to, the commissioner of navigation, under the laws creating his office, "to administer all laws not subject to the supervision of any other officer of the government, relating to vessels and seamen," published the law in full, in circular No. 27, dated Feb. 16, 1895, and sent thousands of copies to the collectors of customs on the lakes; and I venture to say, there is not a master or pilot, at all interested in his business, who did not receive a copy thereof.

With these facts set forth, this office does consider it has done its full duty in the matter; and can only regret that, having done so much, it yet fails to impress you that it has not in any sense "met the requirements." This office has no apologies to offer for having sent out the rules of the board of supervising inspectors for passing steamers on the lakes in a circular containing other rules of the board; nor does it believe that any intelligent lake master was confused thereby, or that they needed to be "lawyers" to enable them to determine which rules were theirs, or which were "harbors, rivers and inland waters (except the great lakes * * * *)," or "rules for western rivers."

Paragraphs Nos. 1, 2, 5 and 6 of your description of the circular referred to are, I believe, correct. Paragraphs 3 and 4 are based on a misapprehension on your part, as the extracts from section 4233, revised statutes, did apply to the waters referred to in the rules to which they were attached, and had not been repealed by the act of 1895, as you assert. Nor were the "diagrams illustrating the requirement as to lights" in the rule for "harbors, rivers and inland waters" made "under this superseded act of 1864," as that act was not repealed regarding said "harbors, rivers and inland waters," when the rules therefor were promulgated in the circular under consideration.

The statement made to a representative of your office by a "master and mate" of a large steamship, that they were given, at the time of renewal of their licenses this spring, a copy of the circular of 1894, "contradicting the White law," I have reason to believe, was a misstatement, unintentional probably, on the part of the "master and mate" referred to, for I have before me reports from every board of local inspectors on the lakes, including "Milwaukee" and "Buffalo," each board asserting that no copies of the '94 circulars have been issued to masters or pilots since the act of Feb. 16, 1895, went into operation.

In conclusion, would say that, in view of the assumed fact that there are now on every lake steamer two "unencumbered" copies of the rules of the board of supervising inspectors, and also two copies of the laws governing all steam vessels, including those on the lakes, accessible to the officers of such vessels, I do not feel warranted in complying with your request to furnish all masters and pilots individually with additional copies, though I can see no objection to your company printing and furnishing them at its own expense, as you suggest it is willing to do.

JAMES A. DUMONT,
Supervising Inspector-General.

Treasury Department, Steamboat Inspection Service, Office of the Supervising Inspector-General, Washington, D. C , Oct. 27, 1897.

The Dry Dock Engine works of Detroit has booked another order for a new boiler to be fitted with Howden draft, and for overhauling the engines of a lake freighter to which the new boiler is to furnish steam. The name of the vessel to be thus overhauled with a view to increasing efficiency, is withheld for the present. Forty lake vessels of 52,410 horse power are now equipped or are being equipped, with Howden draft. This draft is now applied throughout the world to ships of 1,561,400 horse power. The figures are from the inventor, James Howden of Scotland, who keeps a record of all installations of the draft.

Secretary Long has finally adopted electricity as the motive power for the operation of turrets and guns of the battleships Alabama and Illinois. It is understood that negotiations are in progress with the Union Iron Works of San Francisco looking to the installation of this system in the battleship Wisconsin.

Hunters' Excursion Rates—Parties of three or more may secure one-fare rates to designated local points on the line of the Nickel Plate road in western Ohio and Indiana; also single tickets will be sold to points in the northwest and southwest. No. 354, Nov. 15.

Answering the Free Traders.

MR. W. J. BABCOCK OF THE CHICAGO SHIP BUILDING COMPANY PINS DOWN A FEW IMPORTANT ADMISSIONS MADE BY A RABID FREE SHIP ORGAN—ANOTHER FORCIBLE LETTER.

Editor Marine Review:—I have read with interest the editorial from the New York Journal of Commerce and Commercial Bulletin, reprinted in your last issue, and purporting to be an answer to my recent article on ship building here and abroad, and note with the greatest satisfaction that that paper, long a rabid free ship, free trade organ, agrees entirely with my statement that ships can be built in this country at substantially the same prices as in England. After that admission I can bear with considerable equanimity the attack on my letter of three years ago to the New York Sun advocating discriminating duties, especially as that attack is based, as is quite the usual custom with free traders, on misrepresentation of what I really said. That letter may be searched in vain for any reference whatever to subsidies, but it does contain a statement made on the authority of Mr. Charles H. Cramp himself, that the higher types of ships could be built here as cheaply as abroad. The commerce of the world, however, is not carried in great, high-powered passenger steamers, and at that time, notwithstanding the airy statement of the Journal that this equality in cost had existed and been perfectly well known here for years, there was a considerable difference in favor of England in the cost of freight boats. If this were not so, why was the Tracy bill, admitting foreign ships to American registry on condition that an equal tonnage be built here, introduced in congress on Feb. 16, 1894, and backed by the whole power of the administration and the free ship crowd? Why has an out-and-out free ship bill been introduced in congress every year for twenty years or more up to two years ago, when the Fithian bill in January, 1896, was quietly put to sleep by a unanimous vote in the senate committee on commerce, though supported by President Cleveland in his annual message, by the secretary of the treasury in his annual report, and by the commissioner of navigation in lengthy and labored argument in every report he had ever written?

The Journal of Commerce says: "It is possible that the cost of ship building has declined here in the last three years, but the important change has been in the amount of Mr. Babcock's information."

Well, I happen to be reasonably familiar with the cost of building at least one pretty important class of American ships—lake freighters—for several years more than three, and I can assure the Journal that it has very greatly declined in the last three years, and that is a matter of pretty common knowledge around these lakes, too.

The important matter, however, is not the amount of my information, but it is the Journal's admission of the truth of my statement as to equality of costs. This removes all reason for any more free ship bills and a long-standing menace to American ship builders is gone forever, and I confess to considerable pride in the feeling that I have contributed to this happy result. It may be said that with equality in costs a free ship bill, if passed, could not hurt us, as no one would go abroad for what he could get for the same money at home. That is true; but it must be remembered that the expansion of our marine means a corresponding increase in our ship yards, and that, on the principle of the lie well-stuck-to, capital—always timid—would not go into new yards if it was persistently asserted that our building cost was excessive. The frank admission of the Journal removes all danger.

A little further on in the article comes another golden truth, though it were less astonishing to find water in a roadside flint than such an admission in a free trade paper. It is this: "Now that the attention of American capitalists is turning to the sea it is found that the cost of construction has been nearly equalized, but there still remains the greater cost of operating American than foreign vessels, due mainly to the fact that the employment that can be had on the land keeps up the wages on the sea!" There is the American case in a nut shell. What but the policy of protection has kept up our wages on the land? Are we to abandon that now and embrace free trade to force down wages on the land in order to succeed on the sea? Or if it has taken thirty years to equalize costs in building ships, are we to sit with our hands folded for thirty years more until operating expenses are equalized also, and pay one hundred and fifty millions a year to the foreigner in freight and passage money all that time? The Journal is bitter against discriminating duties and subsidies, both, but it makes no suggestion of any other way to make up this difference in operating costs.

Where then do we stand? That the necessity is urgent and calls for prompt measures of some kind everyone agrees. I believe myself in discriminating duties, because they will give us our carrying trade without cost to our government; because it is only extending to the sea the protection which is our settled policy on land, and because all history shows that it is only by such protection that any nation has ever been able to develop its marine. Protection is discrimination. Retaliation is a phantom that need not alarm or deter us. Is there any practical difference between charging a discriminating duty of 10 per cent. on foreign goods coming in foreign bottoms and increasing the regular duty on the same goods 10 per cent.? We do not hear of retaliation by England in the latter case, though the effect on her industries is much worse than could be in the former, as, for instance, at this present moment a strike of two hundred thousand cotton operatives is threatened because the English manufacturers must reduce wages to meet the increased duties of the Dingley bill, and we would not hear of retaliation if the Elkins bill were passed. Two thirds of our exports to England are food products, and any retaliation would only increase their cost to her people, which no British government would dare to propose.

But, the free traders howl, the Elkins bill would compel the abrogation of thirty three different treaties with foreign nations! Well, what of it? Has Great Britain hesitated within the year to denounce her treaties with Germany and Belgium in order to help her colonies? There is no real friendship between competing nations, and the sooner the United States finds that out and begins to fight for its own hand, the better off its inhabitants will be.

Chicago, Nov. 3, 1897. W. I. BABCOCK.

Army and navy charts of the lakes are kept in stock by the Marine Review, Perry-Payne building, Cleveland.

Uncertainties of the Law.

A case illustrative of the uncertainties of the law, or perhaps it may be more accurate to say the uncertainties of the administration of the law, is that known on the lakes as the New York-Conemaugh collision case, which was last heard of a few days ago in a decision from Cincinnati. The decision is now at hand. The propeller Conemaugh, loaded with a cargo of flour and general merchandise, on the night of Oct. 21, 1891, was collided with, a short distance below Sandwich, Ont., in the Detroit river, by the propeller New York, and sunk, under circumstances substantially as follows: A descending tow, in making a landing, occupied the channel, excepting a narrow passage on the Canadian side. The Conemaugh bound down, was approaching the clear space when she observed the lights of the New York coming up on the American side and also heading for the open space. The Conemaugh blew a passing signal of two blasts, and nearing the New York repeated it twice, to none of which was any answer given. As the Conemaugh cleared the end of the tow which narrowed the channel, the New York's green light, about a quarter of a mile away, was shut out; the Conemaugh blew a danger signal, put her helm hard a-starboard and continued at full speed, showing her starboard light to the New York, which also proceeded at full speed under port helm, showing her port light. Just before collision, the New York starboarded, but too late to prevent collision, which occurred near the eastern side of the channel. The first and second signals of the Conemaugh were not heard on New York, and she did not see the former until the alarm signal was blown.

On the first hearing both vessels were condemned, the New York for not holding her course and stopping or reversing, the Conemaugh for not stopping on losing the New York's starboard light. As to the New York, the district judge said: "A fitter case for the exercise of this disciplinary power committed to the inspectors of steam vessels than that afforded by the navigation of the New York can scarcely be imagined. Revocation of the license of her master, or an extended period of suspension, would have a salutary effect in promoting the safety of life and property on the lakes. The case of the New York is without the shadow of a defense." This strong condemnation for her failure to hear the first two signals of the Conemaugh and when attention was challenged by a third, not to see her until the alarm signal was sounded, "although the weather was favorable to sight and hearing and the conditions of the locality called for careful navigation; and after the Conemaugh was seen, and the danger signal blown, the New York's speed was maintained to the very instant of collision." As to the Conemaugh, the court said: "The equities of the case are so strongly in favor of the Conemaugh that the conclusion that she was also in fault has been reached with reluctance, and not without considerable doubt. * * * But the impossibility of enforcing the great commandment of the law of navigation which calls a halt when risk of collision is involved, compels me to adjudge both vessels at fault."

A petition for rehearing was filed by the Conemaugh and the cause reargued. The decree theretofore entered was vacated, and one entered holding the New York solely at fault, the court saying: "A careful reexamination of the testimony in the case, the admitted circumstances attending the collision, and the rule of law applied by the supreme court of the United States, since the former decision of this cause, have satisfied me that in holding both vessels at fault, too harsh a judgment was passed upon the conduct of the master of the Conemaugh in holding that vessel in fault for the failure to stop and reverse, instead of going ahead at full speed in its efforts to escape the New York."

Reference was had, and damages assessed at $69,978.91, with interest and costs. The cause was appealed to the circuit court of appeals for the sixth circuit, and on Oct. 4 that court rendered its opinion, holding the Conemaugh solely at fault and completely exonerating the New York. The opinion of the court is quite lengthy, and on the facts finds against the Conemaugh. It finds that the course of the New York rounding the tow "could not be affected by the fact of the Conemaugh's presence;" that she had the right to "swing gradually to port under a slowly turning starboard wheel, so as to make an easy sweep back to mid-channel." They find that no fault was attributable to the New York for failing to hear the Conemaugh signals or to answer them or to see her; "that the New York had the right and duty to maintain her speed, as well as her course, unless there was to her some distinct indication that the Conemaugh was not going to keep out of her way by porting."

Some very grave questions are presented by the opinion, comment on which is properly reservable until the legal proceedings are closed. Petition for rehearing may be had and the supreme court applied to for a writ of certiorari. Either the trial or appellate court is grievously at fault, not only on the facts but the law. The subsequent proceedings will be of interest.

New York state canal officials a few days ago approved of plans for improving about seven miles of the Oswego canal at an estimated cost of $152,745. The work has been divided into two contracts, and when they are let the state will have contracted for the expenditure of the entire $9,000,000 recently appropriated for canal improvements, but it will be some two years before the work for which the contracts are let is entirely completed. The $9,000,000 is not sufficient to carry out the scheme of improvement for which it was intended, and a further appropriation will undoubtedly be asked for at the next session of the legislature.

Floating dry docks of immense capacity are talked of in several parts of Europe. It is reported that C. S. Swan & Hunter of Wallsend, England, who recently built the big floating dock in which the Spanish government is to repair at Havana, disabled vessels of the Cuban fleet, have just received an order for a floating dock capable of lifting a vessel of 15,000 tons displacement and 500 feet in length, for the Vulcan Ship Building & Engineering Co. of Stettin. The dock is for early delivery, as the Vulcan company require it to lengthen and re-engine the North German Lloyd steamers Spree and Havel, there being no dock at Stettin suitable for the purpose.

All charts sold by the Marine Review are corrected to date of sale.

Immense Consumption of Ore.

The consumption of Lake Superior ore during three or four months past has been on such an immense scale that there is reason to expect an output of about fourteen million tons in 1898, if the railway and dock facilities are made equal to the probable requirements. This statement is made as a result of some very important figures just presented by the Iron Trade Review. Students of ore problems, whose acquaintance with the operations of consuming interests has made it possible to guage closely the use of Lake Superior ores, have made some investigations of late which yield surprising results.

"The figuring has been based," says the Review, "on a very careful analysis of blast furnace operations, taking furnace by furnace of those supplied with Lake Superior ores, and setting down, always on the conservative side, the consumption since May 1, the opening of the season of 1897. Allowance was made for periods of inactivity in individual instances and the consumption of ore was figured at 1.7 tons for each ton of pig iron, taking into account also the probable use of cinder and in some instances of local ores. It appeared from the calculation that if the furnaces now in blast continue active to May 1, 1898, when the new ore season opens—making no estimates for possible additions—the consumption of Lake Superior ores from May to May will reach a total between 13,000,000 and 13,500,000 tons. This is quite beyond anything ever attained in a year. The boom year 1895 was probably three millions tons short of it. The situation as it is today becomes more impressive when it is stated that the same investigation shows that if the rate at which Lake Superior ores are being consumed today is kept up for a year the total will be 14.700,000 tons. So well sold are old range Bessemer ores at the present time that it is doubtful if a total of 200,000 tons could be scraped up at the end of the season, counting 1898 dock ores and all. The sales of old-range Bessemers for the year and of other old-range ores entering Bessemer mixtures will be fully 6,000,000 tons."

Underwriters and Masters.

Chicago insurance agents who have of late acquired the great bulk of lake insurance make no answer to the report that they are keeping a record of the work of vessel captains, with a view to passing upon their qualifications when insurance contracts are under consideration in the future. Some of the stories that were printed regarding their intentions in this regard were so absurd that it is not surprising that they were allowed to pass without any attention being paid to them. Nobody will question the right of underwriters to record on their own private account particulars of accidents, and to note the names of men in charge of vessels meeting with accidents. It is quite probable that the Chicago agents have been doing this, in connection with the general system of statistics which they have inaugurated, and that they are also keeping a record of men who have been especially successful in handling lake vessels. In a specific branch of shipping like that of the lakes, such a record could be readily compiled, and it would undoubtedly prove useful on many occasions. But the report that the underwriters are planning to dictate to vessel owners in the matter of employing men to sail their vessels is undoubtedly without foundation. The Chicago agents must be credited with good judgment in everything new that they have undertaken thus far, and if they are keeping a record of the success or failure of vessel masters, it is quite certain that they will act upon this information only in cases where their interests are seriously involved, and that their action will not work hardship to deserving vessel masters.

Several manufacturing concerns that have been supplying special machinery to lake ship builders report that of late their works have been engaged very largely on foreign orders. During the month of October the Chicago Pneumatic Tool Co. received cable orders for fifty-six machines—hammers, drills and riveters. Letters to this company from different parts of Europe report that their machines are given preference in nearly all cases. Within the past thirty days this company has doubled its capacity by putting new machinery into its factory, but owing to increased business they are still obliged to run day and night, as they have been doing since March 1. Another concern that has been placing some of its specialties abroad is the American Blower Co. of Detroit. A large contract from Belfast, Ireland, as well as several for England and the continent, are now in process of execution at this Detroit works, and among recent orders for heating apparatus is included one from the Chicago Ship Building Co. for heating their new machine shop, which is of rather unique construction.

Among Atlantic coast ship builders, interest during the past week has been centered in contracts for the building of one or two twin-screw steamers for the New York and Cuba Mail Steamship Co., which recently secured from the government the contract for carrying the mails between New York, the West Indies and Mexican ports. A New York dispatch says that the Cramps have secured the contract for two vessels of 400 feet length, 50 feet beam and 20 feet draft, but it is claimed at Chester, Pa., that only one vessel will be built and that the Roach yard of that place will be given the contract. Charles Reeder & Son of Baltimore have closed a contract with the Port Deposit & Havre de Grace Steamboat Co. for a small excursion steamer, and the Chas. Hillman Ship & Engine Building Co.of Philadelphia have contracted to build for the J. B. King Trans. Co. of New York a steel tug that will cost about $100,000.

A chart of Lake Erie islands and vicinity, including Sandusky bay, which has just been issued by the hydrographic office, should be carried aboard every vessel trading to Lake Erie. It is on a large scale and was made principally from a survey conducted in 1896 by officers of the U. S. S. Michigan. Range lights in the Sandusky channel and in fact all detail that could possibly be expected is found in this chart. Although most charts from the hydrographic office are higher in cost than army charts, this one sells for 35 cents. It may be had from the Marine Review.

If the sun's red in the west, next day hotter than the last.

November Storms on the Lakes.

Another chart from the United States weather bureau presents a valuable collection of information regarding November weather on the lakes: November is one of the most perilous months of the season of navigation. The winds are frequently of midwinter violence and the heavy snowstorms that sometimes accompany them make navigation exceedingly difficult. As compared with October, the number of severe storms is greater; northwesterly gales continue for a longer time, and the weather is much more likely to be overcast and threatening. One hundred and sixty-six storms of greater or less severity (an average of eight per month) have passed across the lake region during Novembers of the last twenty years. While the majority of these storms can be safely weathered by the larger craft, the perils of navigation are greater than in October by reason of the general inclemency of the weather in late November storms.

From records of maximum wind velocities, it has been found that the highest winds in November have occurred at a majority of the lake stations since 1891. The highest wind velocity ever recorded in this month at Port Huron, Detroit, Toledo, and Cleveland occurred on Nov. 26, 1895. This severe storm was general throughout the lower lake region, yet the number of casualties was comparatively small, a fact which illustrates in a striking manner the changes in the character of lake shipping that have taken place during the last twenty years. In November, 1879, a month of severe storms, none of which, however, were equal in severity to that of Nev. 26, 1895, sixty-one lives were lost, and a total of 110 vessels went ashore or grounded, probably the greatest number of casualties ever recorded in a single month. These figures might well be taken as the total casualties of an entire season during recent years.

The general course pursued by November storms is shown by storm tracks on the chart. Forty-five per cent. followed a course indicated by a line drawn from Grand Marais, Minn., across the Keweenaw peninsula, through the upper Michigan peninsula and thence over the upper part of Lake Huron to Georgian bay; 25 per cent. were from the south-west, passing over the lower part of Lake Michigan and across the lower Michigan peninsula to Lake Huron and Georgian bay; others were confined to the north shore of Lake Superior and to the eastern part of Lake Erie and western end of Lake Ontario. Storms that pass eastward to the north of Lake Superior give brisk to high southwesterly winds over the lakes and generally little or no precipitation. These storms are not especially dangerous to navigation. On the other hand, storms which approach from the south or southwest may cause violent gales over the lakes, accompanied by rain turning into sleet and snow.

Around the Lakes.

The steel tow barge Martha of the Minnesota line loaded 181,300 bushels of corn in Chicago, Saturday, on a draft of 16 feet.

Capt Michael Riley of Erie died suddenly aboard his steamer, the Susquehanna, at Port Huron, Tuesday. He was fifty-five years of age.

Capt. George Wittey, for twenty years with the Goodrich line, and for a long time master of the steamer Chicago, died at his home in Manitowoc, Thursday, aged forty-three years.

A letter from the light-keeper at Monroe, Mich., to the Cleveland branch hydrographic office reports that Hubbell dredge No. 3 is sunk in Lake Erie, about 700 feet east of the lighthouse, in 9 feet of water. A light is placed on her at night, and it is expected she will be raised in a few days.

A slip and docks are being prepared at Muskegon, Mich., for the new car ferries that are to be operated between that port and Milwaukee by the Chicago & West Michigan Ry. It is expected that docks will be finished so that the Lake Erie ferry Shenango, which has been secured as the first boat for this service, may begin regular trips early in December.

A circular from the light-house service announces that the work of changing the iron buoys in the ninth district (Lake Michigan) for the winter, to spar buoys, similarly painted, will begin on these dates: Gas lighted and bell buoys, Michigan and Wisconsin, Nov. 10; Fox island shoals and Manitou shoals, Nov. 12; Sturgeon bay, Nov. 15; Green bay and channels between Lake Michigan and Green bay, Nov. 16; Mackinac straits (west of Old Mackinac light station), and channels north and east of Beaver island group, Nov. 20; off Sheboygan, Nov. 22; off Milwaukee and Racine, Nov. 23; off Chicago, Nov. 25.

Another of the old Grummond vessels is a source of worry to a large number of creditors. Some time ago Hiram Brown of Detroit secured the old passenger steamers Flora and Atlantic from the Grummond estate. The Atlantic has been resting in one of the "bone yards" of the Detroit river, but the Flora was operated by Brown during the past season in freight and passenger business between Cleveland and Port Stanley, Ont., and was thought to be meeting expenses. Suddenly the vessel was run over to Port Stanley, leaving several unpaid bills in Cleveland. The next heard of her, she was to be sold Oct. 28 by order of court in Canada. Capt. C. E. Benham of Cleveland, representing two or three Cleveland creditors, and having a claim himself against the vessel for supplies, surprised the Port Stanley people by putting in an appearance on the day of sale. He was there to bid on the vessel, so as to prevent her being sold at a nominal figure. She was bought for $2,700 by George Shanks of Windsor, who is a Detroit river ferry captain, and wno is said to represent the Windsor & Lake Erie Railroad Co., which is controlled by the Walkers. The new owners have been given possession of the vessel, but the matter of claims will not be settled until the November term of the court at Sandwich, Ont.

"From the Lakes to the Sea" is the title of an illustrated article by Carl Snyder in the Review of Reviews for November. Portraits of Major C. W. Raymond, Geo. Y. Wisner and Alfred W. Noble, members of the new deep waterways commission, adorn the first page of the article.

Capt. E. N. Marion, local inspector of hulls at Buffalo, died of apoplexy at his home in that city, Thursday, aged fifty-one. He was well known as a lake captain before being appointed to the position of hull inspector about seven years ago.

MARINE REVIEW

DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department on June 30, 1896, contained the names of 3,333 vessels, of 1,324,067.58 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1896, was 383 and their aggregate gross tonnage 711,034.28; the number of vessels of this class owned in all other parts of the country on the same date was 315 and their tonnage 685,204.55, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1896, was as follows:

	Number.	Gross Tonnage.
Steam vessels	1,792	924,630.51
Sailing vessels and barges	1,125	354,327.60
Canal boats	416	45,109.47
Total	3,333	1,324,067.58

The gross registered tonnage of the vessels built on the lakes during the past six years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30. 1891	204	111,856 45
" " " 1892	169	45,968.98
" " " 1893	175	99,271.24
" " " 1894	106	41,984.61
" " " 1895	93	36,352.70
" " " 1896	117	108,782.38
Total	864	444.216.36

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC. (*From Official Reports of Canal Officers.*)

	St.Mary's Falls Canals.			Suez Canal.		
	1896*	1895*	1894	1896	1895	1894
Number of vessel passages	18,615	17,956	14,491	3,409	3,434	3,352
Tonnage, net registered	17,249,418	16,806,781	13,110,366	8,560,284	8,448,383	8,039,175
Days of navigation	232	231	234	365	365	365

*1895 and 1896 figures include traffic of Canadian canal at Sault Ste. Marie.

In the closing days of October, a severe storm passed over the Atlantic. Its effects were not at all disastrous. "This storm,'" says the New York Sun, "affords a striking illustration of the change that has come over seafaring life. The literature of seafaring has been supplied almost entirely by the period of sails; the steamship does not lend itself easily to literary treatment. Part of the glamour associated with the older sea life was imparted by the danger attending it. Not only was there hardship, but very great loss of life. There is hardship enough left, but it is of a different sort; there is still danger, but of a different sort; the measure of this is the loss of life, and how this has diminished the recent storm helps to tell us. Before the steam era, the month of October would have seen the Atlantic whitened with sails converging upon New York. The Liverpool emigrant ships, ships from the Mediterranean with Spanish and Smyrna produce, ships from Calcutta, Batavia, Manila and China with teas, silks, hemp and sugar, ships from Rio with coffee, a whole fleet of smaller craft from the West Indies would have been involved in the storm, and the casualties would have been many, the loss of life large. For weeks yet we should witness them creeping into port under jury rig, and for months names would be added to the Lloyds lists, 'Given up for lost.' So there is substantial compensation for the vanished poetry of the sailor's life and the exaltation that made of him who had doubled the Cape something of a personage. The twin who had had one birthday less than his brother, dropped in crossing the 180th degree, could scarcely today excite general interest. No one's cigar smoked off the blue Canaries now need be his last, for the ship has more in stock; neither would he know whether the land breeze blew soft or blew at all, with the ship making a 16-knot breeze of her own. But he will get into port with no livelier encounter that that with the custom house officer."

At the fall meeting of the Board of Trade and Transportation, held in New York recently, Charles H. Cramp quoted official records showing that the grand total of all subsidies paid to British steamships from 1833 to 1895, inclusive, is £48,985,600 (say $244,928,000); and to this should be added about $12,000,000 paid by the United States post-office department to foreign steamships (about 85 per cent. British) for carrying the American mails from the destruction of the Collins Line in 1858 to the end of the fiscal year of 1896. Meantime the government of the United States has paid to American steamships, including the Collins subsidy from 1851 to 1858, and varying rates of mail pay since, a grand total of only $28,456.730. From the infancy of steam navigation England has been subsidizing her ships engaged in foreign trade. "From 1833 to 1848," says Mr. Cramp, "she lavished $29,900,000 in subsidies on her steam merchant marine. From the last-named year onward that policy was pushed with great vigor. In 1870, when it was deemed important to take advantage of the war between France and Germany, and also to meet the threat of a new American line, the subsidies rose to about $6,127,500. In 1895, the amount, including the naval auxiliary subvention, was $4,455,000. The truth is that there is no other case of protection recorded in human annals equal to that which England has lavished on her merchant marine. She began the policy of subsidies at the very cradle of steam navigation. Her first subsidy was one of $4,250 a year to a little steamer of 150 tons for semi-weekly trips between Liverpool and the Isle of Man in 1833. That contract is still in force, without interruption in sixty-seven years; the service, however, having been increased from semi-weekly to daily, and the amount raised to $10,500 a year."

Secretary Long of the navy is opposed to the establishment of a government armor plant, on the ground that it will increase the cost of armor. The expense of erecting such a plant would be disproportionate to the results. The cost of labor would be great, and it would be difficult to obtain trained men to remain at the factory when there was no work. Ordnance officials believe that if congress holds to its determination not to pay over $300 per ton for the material, the Carnegie and Bethlehem companies will not bid for contracts. The Department, however, will endeavor to induce congress to increase the limit above $300 in case it be finally decided not to establish an armor factory. Secretary Long is supported in his views by Capt. Charles O'Neil, chief of the bureau of ordnance; Chief Naval Constr. Hichborn, chief of the bureau of construction and repair, and other chiefs of bureaus of the department.—Army & Navy Journal.

Washington dispatches would seem to indicate that Mr. E. H. Moreton of Detroit, who is trying to establish a car ferry service between Sandusky and Detroit, is disappointed because the treasury department would not give him permission to operate between American ports a couple of cheap Canadian bottoms which he was intending to purchase from the Grand Trunk company. There's nothing new in the position taken by the treasury department officials. The proposition to use Canadian vessels in carrying freight cars between Sandusky and Detroit, no matter how it was to be done, was contrary to the coasting laws, and Mr. Moreton and his associates, who have to thank these coasting laws for any success they may have had in business, should not be found trying to override their provisions in a matter of this kind.

It is certainly strange that a journal like the Iron Age should print the following item: "The largest cargo of wheat ever carried by a steamer on the great lakes was recently brought to Detroit by the new steamship Niagara, recently completed for Hall, Munson & Crossthwaite of that city. She carried 113,500 bushels. The new vessel is 281 feet long, 40 feet beam and 19 feet depth of hold." The amount of wheat in this cargo would weigh a little more than 3,000 net tons. There are two or three hundred vessels of more than 3,000 tons capacity on the lakes, some of the largest of them (400-foot type) having moved in several instances cargoes aggregating 6,000 to 6,300 net tons. The largest grain cargoes are 225,000 bushels of corn, 205,445 bushels of wheat and 318,000 bushels of oats.

The effect of oil on troubled waters has become almost proverbial, but probably few have ever given more than passing thought to the remarkable nature of the effect considering the immeasurable thinness of the oil covering. A film 1-30-millionth of an inch thick produces marked results, and yet, according to Sir Benjamin Baker, to cover the whole 135 acres of painted surface of the Forth bridge with a coat of that thickness, would require less than a pint of oil. It would appear inconceivable that such a membrane could in any way affect the ocean in a storm, and yet all available experience tends to show that the small quantities of oil which have been applied, with good results, in heavy seaways, could not have given any but the most minute thicknesses of coating.—Cassier's Magazine.

A formal wind-up of affairs of the Metropolitan Iron & Land Co., so far as the old management is concerned, took place at Milwaukee, Saturday, when the heads of the Oliver Mining Co. (Carnegie-Oliver combination) named the following new officers and directors for the Metropolitan company: President, H. W. Oliver; treasurer, H. M. Curry; secretary, C. D. Frazer, all of Pittsburg; directors, H. W. Oliver, H. M. Curry, D. H. Clemson and James Gayley of Pittsburg, and Capt. S. S. Curry of Ironwood, Mich. Offices of the company go to Pittsburg. Prof. N. P. Hulst, who is general manager of all of the Carnegie-Oliver mines, will have his headquarters in Milwaukee.

In acknowledging the receipt of a copy of the Marine Review containing Mr. W. I. Babcock's article on ship building in this country and England, Hon. Irving P. Wagner of Norristown, Pa., who is a member of the committee on interstate and foreign commerce in the house of representatives, says: "Mr. Babcock's article is a timely contribution to the literature of the subject, and I trust that legislation in congress may be possible whereby a policy will be established which will assure the ship yards of the country of steady work and restore to our country a fair share of foreign commerce."

Secretary Long's estimate of the money required for the navy for the fiscal year beginning July 1, 1898, places the amount at $32,000,000. This sum includes nothing for the building of additional ships or for the construction of new dry docks. It is probable that those subjects will be dealt with in a supplementary report estimating that perhaps $18,000,000 will be needed for these two branches of the service. Briefly, then, the continued development of the navy will require an appropriation of not less than $50,000,000 this year.

The estimates of Gen. Wilson, chief of army engineers, on river and harbor works of all kinds for the fiscal year to begin June 30 next is $48,328,160, of which $18,876,007 is for continuous contracts already authorized by congress and $29,452,153 for works not provided for by continuing contracts. Of course not all of the work for which estimates are submitted will be undertaken.

Dec. 1 for Sault Ste. Marie and Dec. 8 for Duluth are average dates of closing of navigation during forty years past. In 1892, 1893 and 1894, the Sault canal closed Dec. 6; in 1895 the date of closing was Dec. 9, and in 1896, Dec. 11.

A streak of red, then streak of gray, and you will get a gloomy day.

American Competition in Iron and Steel.

Englishmen are now admitting that they entertain grave fears on account of the low range of manufacturing costs attained in the United States. The engineering strike has directed attention to the fact the English employers have not the same control over their workshops and workers that prevails in the United states, and there is a general fear of competition from this country. But this fear is not alone on account of the difference in the two countries in relations between employers and workmen, as the following from J. S. Jeans, former secretary of the Iron and Steel Institute of Great Britain, will show:

"The United States have now attained to such a low range of manufacturing costs as no European country can excel, and probably none can rival. The cost of producing Bessemer pig iron in the most favorable circumstances is now in that country 10 to 15 shillings ($2.50 to $3.75) per ton less than the corresponding costs in Great Britain. The difference in the cost of producing a ton of steel is at least as much, and in the majority of cases is likely to be a good deal more. I know of cases where the labor cost on a ton of billets and rails is 25 to 35 per cent. less than the lowest labor cost I have ever heard of in this country, although the rate of wages paid in America is materially higher. Quite a number of iron works in this country pay from 15 to 17 shillings 6 pence per ton for their coke, which in the neighborhood of Pittsburgh in delivered at works for 5 to 6 shillings per ton. The United States not only command richer and cheaper ores, but they have the fundamental advantage of possessing unlimited indigenous supplies, whereas this country is now producing 30 per cent. of its total output of iron from imported ores, about the extent and duration of which there is a considerable amount of anxiety. Now the bearing of all this on the present dispute is manifest. American engineers can purchase the materials of construction at a considerably lower range of prices than is possible in this country. This fact would alone place them in an almost impregnable position, even assuming that all other things were equal. But, so far from all other things being equal, it is one of the most notorious facts bearing upon the comparative industrial situations of the two countries that American mechanics—partly because of their mechanical equipment, partly because of their greater industry, and partly because of the inducements offered to superior capacity and the absence of the restraints on such superiority common in this country—are able to produce, man for man, a cheaper product than we do in Great Britain. The qualitative superiority of the American mechanic may be doubted; but his quantitative superiority admits of no doubt· and when this advantage is united to cheaper materials of construction we may feel apprehensive as to the future of our engineering industries from the point of view of international competition."

Another correspondent writing along the same lines says:

"There is no denying the massive strength of the British industrial fabric, supported as it is by prestige, unlimited capital and the control of the world's transportation. These have been all-powerful in the past. But epochs of change come. Scepters pass from one hand to another. England will be great for generations to come as the banker of nations, perhaps the shipowner of the world, but in some of her greatest industries there is little doubt that the climax has been reached. Germany has just built, equipped and dispatched to America a steamship which has beaten the English records. Germany commands great resources of science, capital, material, and, above all, eager labor. The English are feeling this sensibly in cottons, woolen manufacture, cutlery, and recently in the industries connected with iron and steel, while the inroads made by America this year in steel rails, billets, pig iron, machinery, electrical equipment, etc., have simply appalled them. In place of the incredulity and indifference which marked the attitude of our cousins a year ago, you now find a readiness to believe anything born of American ingenuity and resources possible. The next twelvemonth will develop much to interest the workers in iron and steel on both sides of the ocean."

Theory Failed in this Marine Engine.

Did you ever observe the difference in the appearance of a piece of mechanism that had been designed on scientific principles, with every part figured out to stand the strains that theoretically should come upon them; every journal having just the proper amount of surface for the load; and another piece of mechanism for the same duty, but which had been developed by experience with the working of many predecessors? No scientific reason could be given for the forms into which certain parts had developed, except that they would not work satisfactorily in any other form. A vessel was built on the Atlantic coast several years ago and was engined by a scientific man. Every part was evidently planned in accordance with correct principles, so far as that particular part was concerned. The engine was triple expansion; the forwar part of the shaft was made the correct size for the high-pressure cylinder; the middle part was made the correct size for the intermediate pressure cylinder, with the high pressure added, while the after part was made the correct size for the low-pressure cylinder, with the intermediate and high-pressure added. I had a talk with the designer of this strange-looking machine, and he was positive that the general practice of marine engine builders was all wrong in this particular, and on many other points.

"Why?" he asked, "should the crank-shaft be made of the same size throughout, when, if the engine is properly designed, the forward part transmits but one-third the work, the middle part two-thirds, and the after part the whole work of the engine?"

Here the want of experience resulted in a failure, because the designer thought that the general practice was the result of lack of knowledge. He could not foresee that his journals and crank pins, being all of different diameters and lengths, and consequently having different velocities, would wear unequally, and that the shaft could not be kept in line.—George W. Dickie, of Union Iron Works, in Cassier's Magazine.

Luce's "Seamanship" has been a text-book at the United States naval academy for the past thirty years. It is being used by naval reserve organizations all over the country. It is a standard work, selling at $10, and will be mailed to any address at that figure by the Marine Review, 409 Perry-Payne building, Cleveland.

St. Paul Salvage Award.

The St. Paul salvage case, which attracted considerable attention on account of the large sum awarded the wreckers, has been referred to several times in these columns, but the decision of the court, correctly reported in full, is only now at hand. In the morning of Jan. 24, 1896, the American line steamship St. Paul stranded about fourteen miles south of Sandy Hook, and was released Feb. 4 by the Merritt Wrecking Co. and the Chapman Derrick & Wrecking Co. The St. Paul was 535 feet on the water line, beam 63½ feet, and at the time she went on was drawing 24 feet. The bottom at the place of stranding was of shifting sand, with clay, and occasional rocks outside of where she lay. The St. Paul was a new vessel, her construction price being $2,650,000 (put at $2,000,000 in arriving at award) and her cargo, of which more than half was gold coin, was valued at $1,999,139. The cargo was removed from the steamer a few days after the stranding and delivered.

Libels in rem against the vessel and in personum against the owners, who had taken average bond from consignees, were filed. The consignees of the gold coin intervened, claiming a separation of interest, and that the coin being easily handled and in small danger should be charged with but a small part of the award. The consignees of the balance of the cargo intervened, claiming that while the cargo should be charged with a less pro rata proportion than that charged to the ship, yet the amount charged to cargo should be uniform on its value. The ship owners claimed the danger was not serious, and the award should only be a "very moderate sum." The property employed in the service was valued at about $400,000; 205 men were engaged, and the cash outlay at the time of releasing the steamer was from $10,000 to $11,000; the whole time occupied was a little over eleven days, and when released the St. Paul proceeded to her destination under her own power, having suffered comparatively small damage —$100,000 hull and $50,000 to machinery.

District Judge Brown (southern district of New York) held that the service was one of "peculiar merit," saying that "the St. Paul, without the immediate aid of great salvage appliances and skill, * * * would have been in extreme danger; and if none were supplied, she would have become substantially a total loss. * * * I have come to the conclusion that $160,000, including all the cash outlays, will be a proper award for the whole service. This award I should consider insufficient had the services been of long duration, or accompanied by any considerable danger to the persons or property of the salvors. * * * No previous salvage task has equaled this in magnitude, and the ship was saved with comparatively small damage. The amount awarded on the other hand, though not large, if measured by a percentage upon the values involved, seems to me to be a sufficient recognition of the importance of the services of the salvors, the necessity of the ship and the success achieved; and also to be sufficiently liberal to serve as an inducement to the maintenance, in the most efficient condition, of such wrecking companies as were here employed."

As to the separation of ship and cargo, the court held that the cargo being removed and delivered, the separation was complete, and it ought not be charged with the subsequent services rendered to the ship alone. The services were, however, treated as one, being conducted for the common benefit, and the award divided proportionately to the time engaged. No distinction was made in favor of the specie, as leading to great difficulties and embarrassments as well as being illogical. The award is a large one, but when the amounts at risk and attending circumstances are considered it seems just. Doubtless an appeal will be taken, but as appellate courts are loath to disturb salvage awards, the amount resting as it does in the discretion of the trial court, unless there is an abuse of discretion "shocking the conscience of the court," the finding will doubtless be affirmed.

Stock of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, Oct. 30, 1897:

	Wheat, bushels.	Corn, bushels.
Chicago	3,377,000	20,659,000
Duluth	3,010,000	678,000
Milwaukee	225,000	327,000
Detroit	237,000	82,000
Toledo	278,000	469,000
Buffalo	1,639,000	2,406,000
	8,766,000	24,621,000

As compared with a week ago, the above figures show, at the several points named, an increase of 749,000 bushels of wheat and 1,080,000 bushels of corn. On the same date there was afloat on the lakes 1,628,000 bushels of wheat, 2,679,000 bushels of corn and 2,516,000 bushels of oats. Grain afloat on the canals aggregated 440,000 bushels of wheat, 292,000 bushels of corn and 465,000 bushels of oats.

New Station.

The new Twenty-third street station of the Pennsylvania Lines in New York is fast becoming popular with Cleveland people. The new cab service inaugurated by this line, with only a nominal charge, is what the people long have wanted. The 1:40 p. m. train from Cleveland has through sleepers to New York without change, and diner serving supper. This express train also makes quick time to Pittsburg, Baltimore, Washington and Philadelphia. For rates and full information call at City Ticket Office, 149 Superior street, Cleveland.

James E. Simpson, known as the originator of the timber dry dock, died at Fall River, Mass., while en route to attend the hundredth anniversary of the frigate constitution at Boston.

Rising sun followed by rain, you'll not see the sun again.

If the rain comes with setting sun, soon the showers will be done.

The Steamboat Inspection Service.

Editor Marine Review:—I have read with much interest the letters appearing in different papers, particularly the Marine Review, suggesting, if not demanding, an immediate reorganization of the board of supervising inspectors of steam vessels from the top down, for the interest of the steamship owners and the security of the traveling public, and I can but heartily endorse every sentiment that will bring about the consummation of such a plausible recommendation, for under present conditions the service is in a truly deplorable state.

In my criticisms I do not wish to impugn the personal character of any of the members of this board, but rather to show from facts that they do not display the ability of practical and experienced men who should occupy such responsible positions. In hardly any instance do they seem competent or capable of grappling at once with the true necessities of the service, but seem like school boys to change their ideas from day to day, and year to year, until ship owners are heartily sick of these continual changes made in their requirements, and the consequent expense and trouble imposed upon them. Their ability should be of such high order that their action in all matters should be final, and not subject to lessons of after-experience or outside suggestions that bring about so many changes in the rules and regulations every year, thus entailing continual hardship and annoyance to ship owners, captains, pilots and even collectors of customs.

The collector of customs at Burlington, Vt., wrote last August to the department for information, asking if a steamer plying between Canada and New York with passengers was subject to the inspection laws of the United States. Mr. Dumont, in his reply, gave it as his opinion "that if the steamer Owl referred to by you takes no passengers other than those brought there in the steamer Owl it is doubtful if the steamer is liable to the United States inspection laws." Why did he not reply positively yes or no? Was it because of his inability to do so? Presumably it was, as he leaves the question open, and in a very astute and plausible way he words his reply so as to get rid of the responsibility and throw all blame on the collector of customs for whatever he might do in the matter. This is a sample of his ability to act with decision, and so it is that in nearly all matters he leaves the local inspectors, ship owners, captains and pilots just as much at sea as to what they should do as he did the collector of customs at Burlington.

To a stranger the history of the board's actions in the matter of the approval of life boats, rafts and other life-saving appliances would read more like a comedy if it did not impress him rather with the idea that it required something more than merit to secure the adoption of any new device or patent. All kinds of life-boats, rafts and other life-saving appliances have been adopted, some having merit, some absolutely worthless, whilst others with much merit have been rejected.

I am not surprised at Mr. McCurdy's remarks in your issue of the 28th inst. relative to navigation rules for the lakes, in referring to which you justly arrive at the conclusion that strange methods prevail in the steamboat inspection service and that in consequence of the crazy patch laws and rules so often jumbled together it would try the patience of a lawyer and perplex even the very best captain of a vessel to construe them. These slipshod methods have been going on ever since the organization of this board, with no apparent chance of any practical change, all because either of their inability to know how to legislate the proper remedy or their total disregard of the wants and requirements necessary for the government of vessels navigating the lakes and rivers of this country. All appeals to the secretary are shelved, because he, not being a nautical man, is entirely dependent on the recommendations of the supervising inspector-general of steamers, who in reality always seems to be actuated either by selfish motives in order to strengthen himself in his tenure of office, or his stubbornness or inability to give us a competent set of rules and regulations.

Whatever the ulterior motives of this board may be, it is very evident that the rules they make and their construction of the laws are calculated to create such confusion and innumerable misunderstandings that no one knows with any degree of certainty how to act in order to avoid being charged with violations. If we had a board with ability and independence enough to act with firmness in their decisions and justice in their deliberations, I do not think that ship owners, captains or pilots would have much, if any, cause to complain. Therefore, I would earnestly recommend that the suggestions of your correspondents in previous issues of your valuable paper be urged unceasingly and that this board be reorganized, from the chief down, by means of a competitive examination, if we wish to secure competent and able men to fill the places.

New York City, Oct. 3, 1897. MARINER.

A crane capable of lifting 140 tons is being erected at the works of the Newport News Ship Building & Dry Dock Co., Newport News, Va. The crane is to be used for the placing of engines, boilers and other machinery in the battleships and other vessels under construction in the ship yard, and will be used also for placing on the sides of the war vessels their armor plates, some single pieces of which weigh from forty to fifty tons. The reach of the crane will be sufficient to cover the entire width of a large battleship. This crane revolves in a circle on a turn-table which is supported on a steel foundation about 25 feet high. The steel foundation is to carry, besides its own weight, the weight of the crane, its machinery, and whatever load may be lifted, which altogether will aggregate 900 tons. The steel support for this crane is being furnished and erected by the Berlin Iron Bridge Co. of East Berlin, Conn.

In the annual report of Chief Constructor Hichborn the 141 vessels of the navy built or building on July 1, 1897, were classed as follows: First-class battleships, nine; second-class battleships, two; armored cruisers, two; armored rams, one; double turreted monitors, six; single turreted monitors, thirteen; protected cruisers, thirteen; cruisers, three; gun boats, ten; composite gun boats, six; special class, three; torpedo boats, twenty-three; iron cruising vessels, five; wooden cruising vessels, eleven; sailing vessels, six; tugs, fourteen; wooden steam vessels unfit for sea service, eight; wooden sailing vessels unfit for sea service, six.

Detroit River Draft.

The depth of water in the vicinity of Ballard's reef, Detroit river, still holds close to 17½ feet. Following are the guage readings for the past week:

DATE.	DRAFT.	WIND.
Oct. 26, 6 p. m	17 ft. 6 in.	Calm.
" " midnight	17 ft. 5 in.	Calm.
Oct. 27, 6 a. m	17 ft. 5 in.	Calm.
" " noon	17 ft. 5 in.	Calm.
" " 6 p. m	17 ft. 4 in.	Calm.
" " midnight	17 ft. 5 in.	N. E., light.
Oct. 28, 6 a. m	17 ft. 4 in.	S. W., light.
" " noon	17 ft. 3½ in.	N. W., moderate.
" " 6 p. m	17 ft. 2 in.	N. W., fresh.
" " midnight	17 ft. 4 in.	N., moderate.
Oct. 29, 6 a. m	17 ft. 4 in.	N., light.
" " noon	17 ft. 3½ in.	N. N. W., light.
" " 6 p. m	17 ft. 3 in.	E., light.
" " midnight	17 ft. 5 in.	E., light.
Oct. 30, 6 a. m	17 ft. 4 in.	S. W., moderate.
" " noon	17 ft. 5 in.	S. W., light.
" " 6 p. m	17 ft. 4 in.	E., light.
" " midnight	17 ft. 5 in.	E., light.
Oct. 31, 6 a. m	17 ft. 4 in.	S. W., light.
" " noon	17 ft. 7 in.	S., moderate.
" " 6 p. m	17 ft. 2 in.	N. E., light.
" " midnight	17 ft. 3½ in.	S., light.
Nov. 1, 6 a. m	17 ft. 4 in.	Calm.
" " noon	17 ft. 7 in.	N. E., light.
" " 6 p. m	17 ft. 8½ in.	N. E., strong.
" " midnight	17 ft. 10 in.	N. E., strong.
" 2, 6 a. m	18 ft. in.	N. E., strong.
" " noon	17 ft. 10 in.	N. E, strong.

Lake Superior is very deep but by no means the deepest lake in the world. The deepest fresh water on the globe is Lake Baikal, in Siberia; next comes Crater lake, in Oregon, which is 2,000 feet in depth. Lake Superior's greatest ascertained depth is 1,008 feet. Lake Michigan in its deepest part is fathomed by a plumbline not much over 900 feet long, and on a line east directly from Chicago its utmost depth is not over 200 feet. Its deep part is the northern portion, the biggest figures in soundings being opposite the Sturgeon Bay canal. Up towards the Straits of Mackinac it shoals off. Lake Michigan's bottom is 400 feet below the level of the sea. The deep part of Lake Huron gives soundings of 750 feet. The utmost recorded depth of Lake Ontario is 738 feet. Lake Erie is the shallowest of the five, in few places being deeper than 80 feet, though to the southeast of Long point the depth reaches 204 feet.

Capt. Carlton Graves of the steamer Keystone reports that his vessel recently struck on the south point of Madeline island. He says this point is in need of a buoy to indicate the extent of the shoal.

Hunters' Rates—Via the Nickel Plate road to designated points in the northwest, and southwest; also to local points in western Ohio and northern Indiana. No. 353, Nov. 15.

Rainbow at night, sailors' delight; rainbow in the morning, sailors take warning.

OFFICE OF LIGHT-HOUSE ENGINEER, 9th and 11th Districts, Detroit, Mich. October 27, 1897. Sealed proposals will be received at this office until 12 M. of Wednesday, the 24th day of November, 1897, for furnishing two (2) Third Order Lanterns for Sturgeon Bay Canal, Wis., and Devils Island, Wis., Light Stations. Plans, specifications, forms of proposal, and other information, may be obtained on application to this office. The right is reserved to reject any or all bids, and to waive any defects. M. B. ADAMS, Major, corps of Engineers, U. S A., Light-House Engineer.
Nov. 11.

$350.00 WILL BUY

Two Propeller Engines 12x14 with Slide Valves, Cranks and all connections complete; three Propeller Wheels, 65 inches in diameter, 60 feet of 4-inch Shafting with Couplings and Cranks.

E. W. DURANT, Stillwater, Minnesota.

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to be Sold

By order of the Circuit Court of Cook County, Illinois.

Bids for all or any of these tugs will be received by the Receiver until 9:00 A. M., November 22, 1897; all bids to be accompanied by a deposit of 10 per cent. of the amount bid.

The tugs can be seen by applying to the Receiver.

J. L. HIGGIE, Jr., Receiver,
Room 63, No. 99 Randolph St., CHICAGO, ILL.

NOV. 12.

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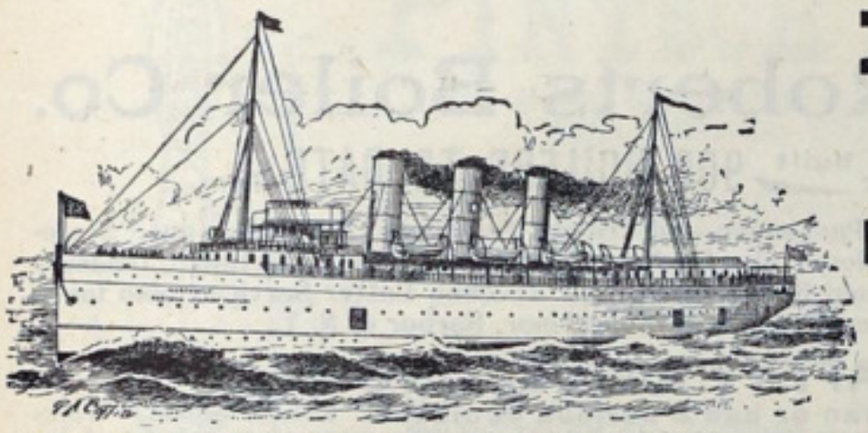

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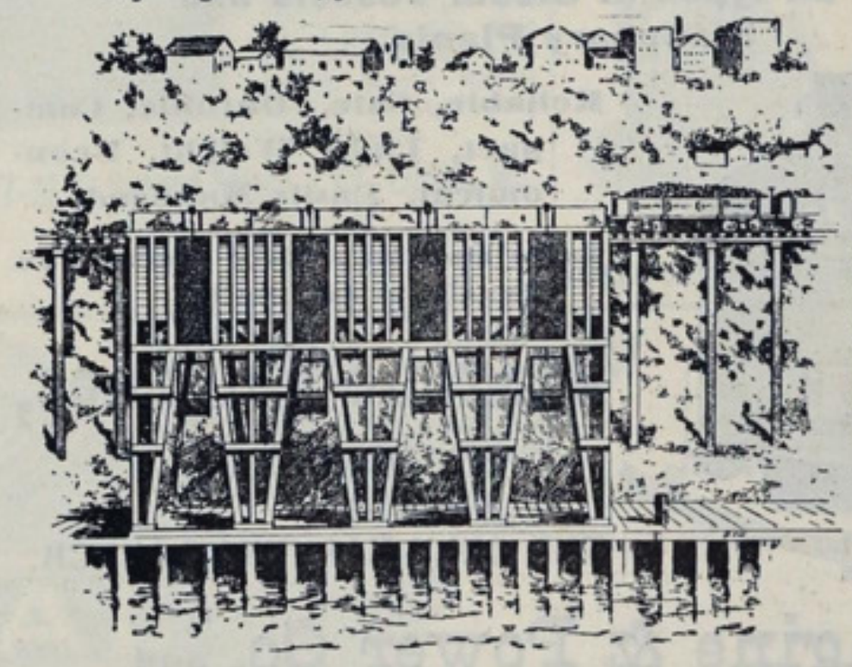

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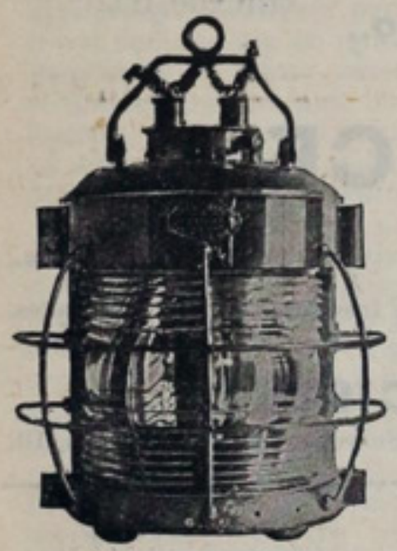

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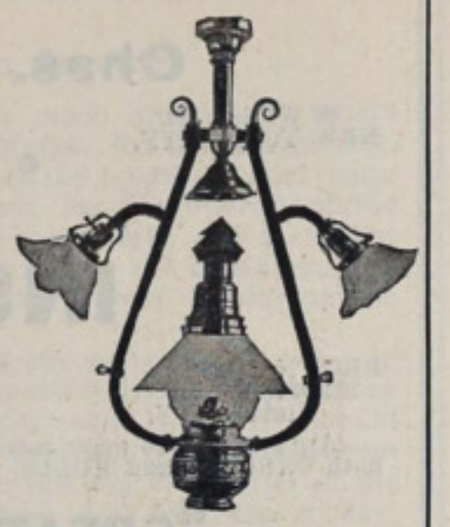

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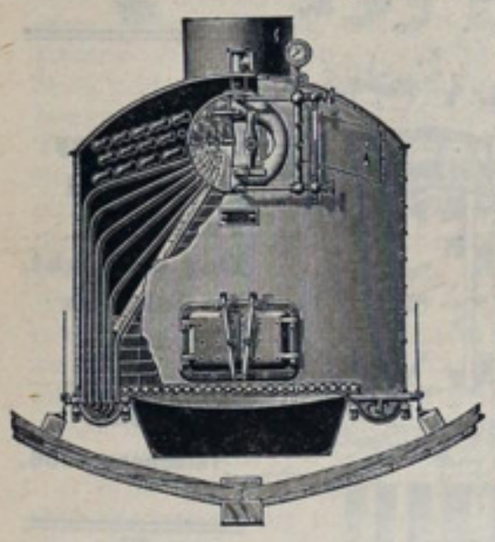

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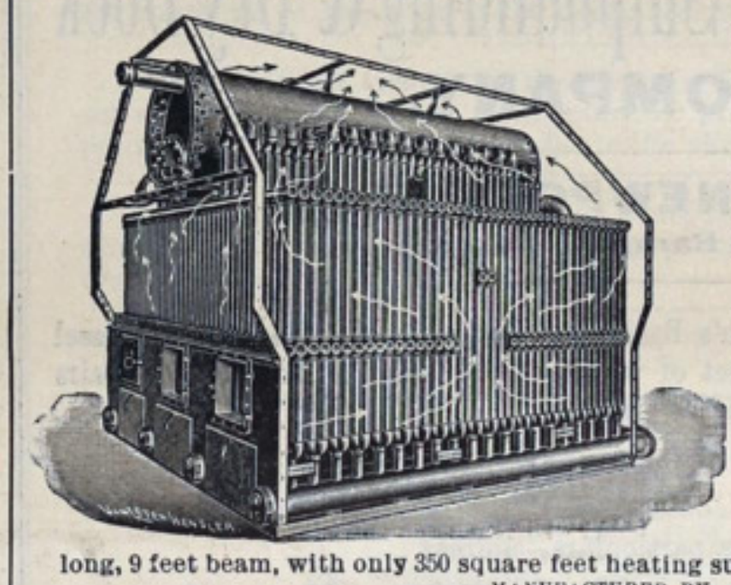

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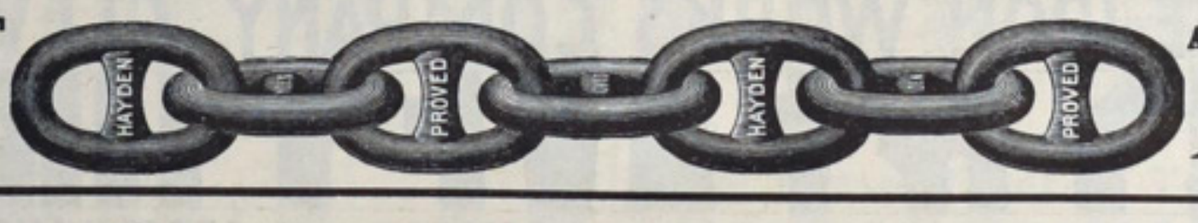

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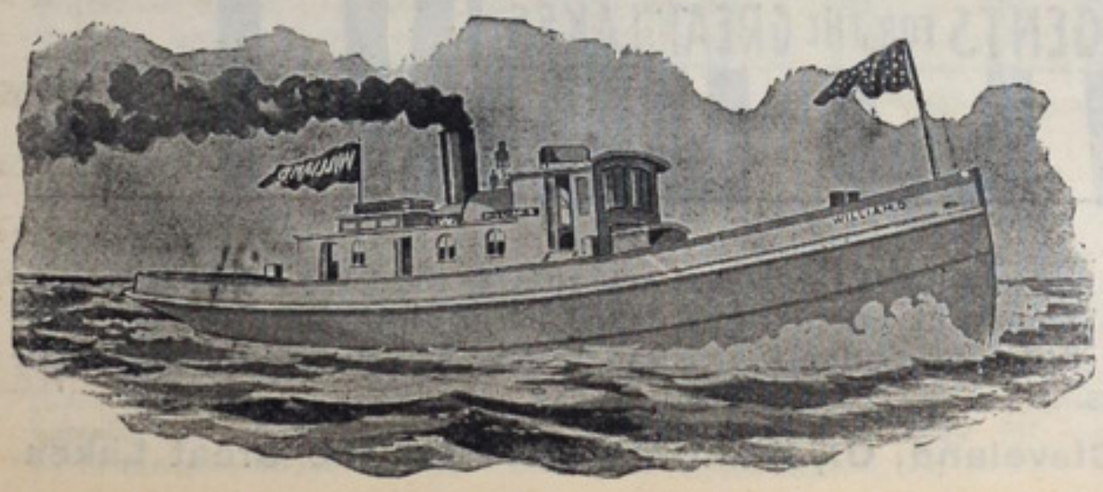

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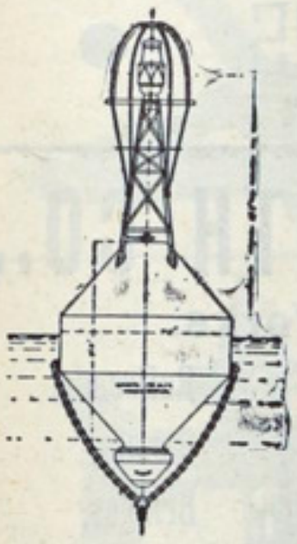

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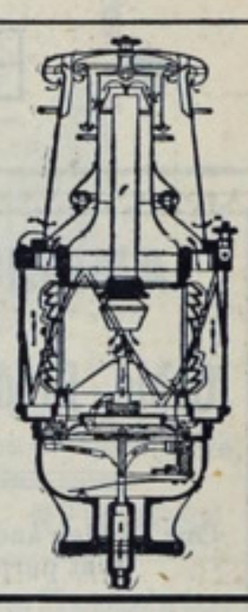

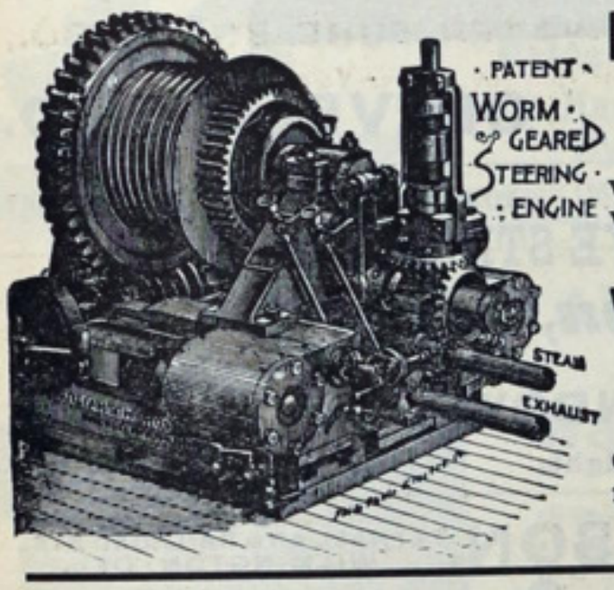

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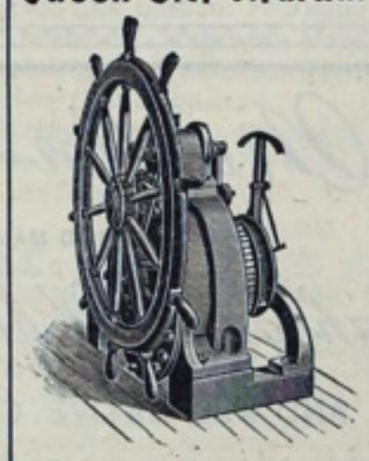

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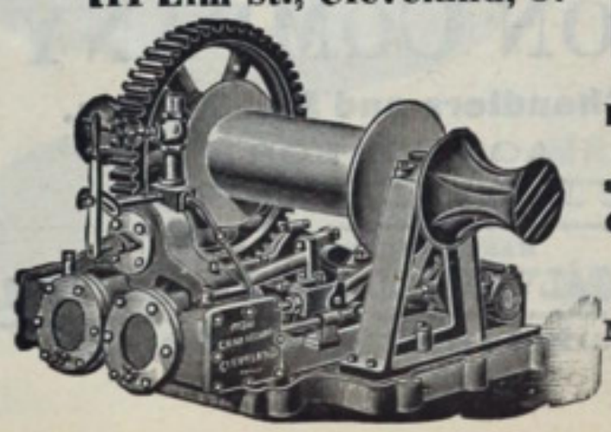

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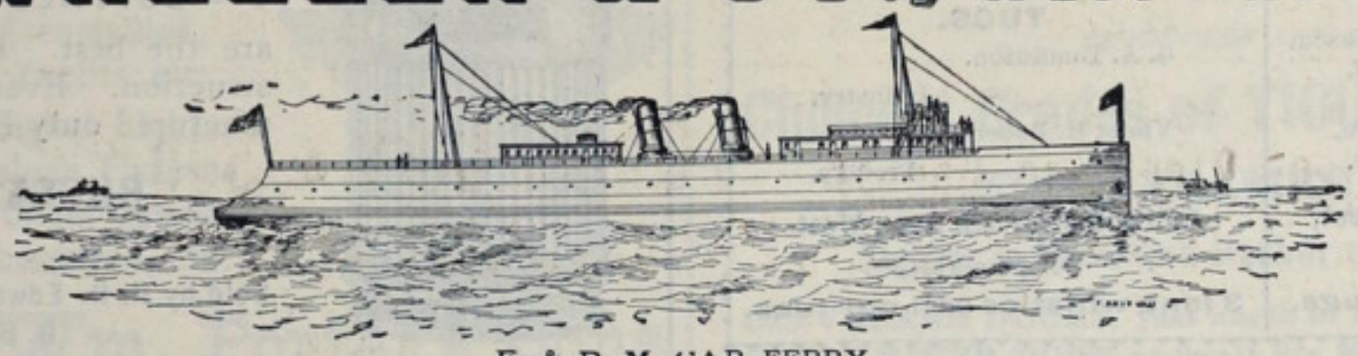

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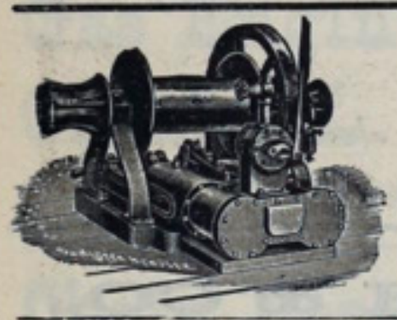

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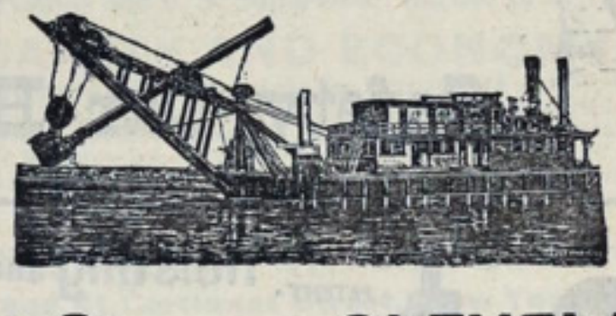

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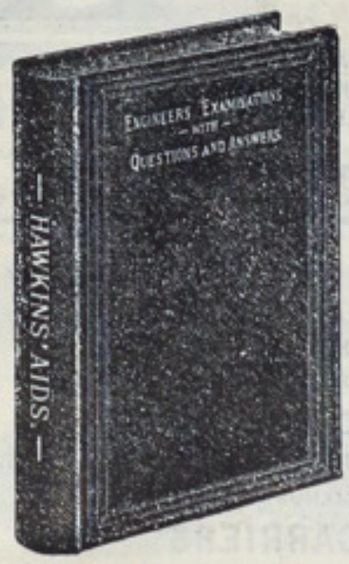

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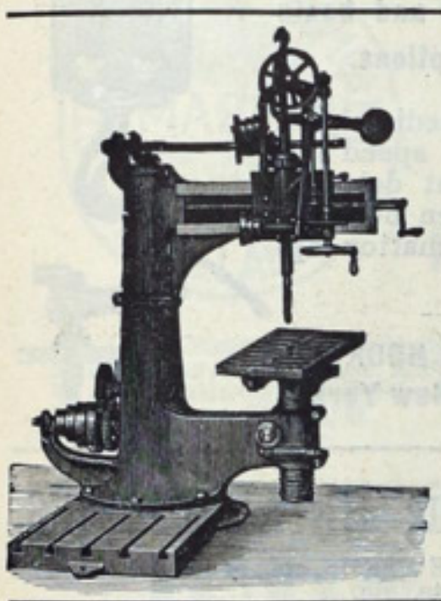

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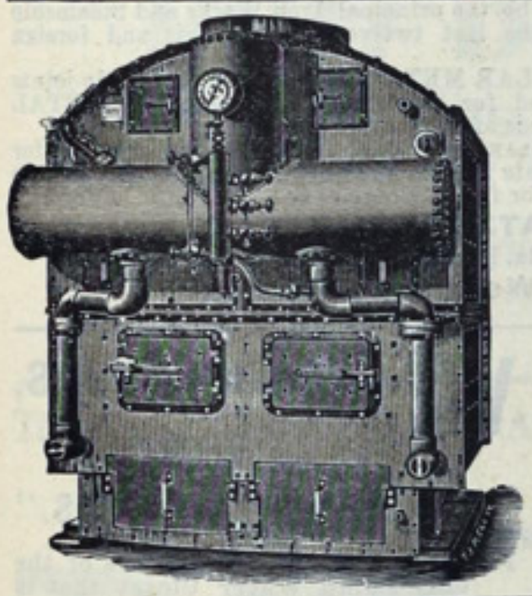

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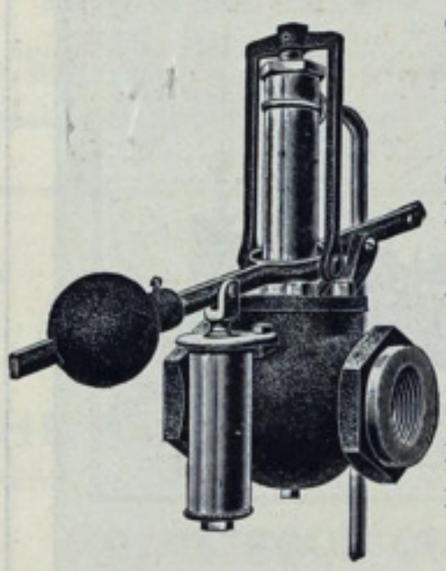

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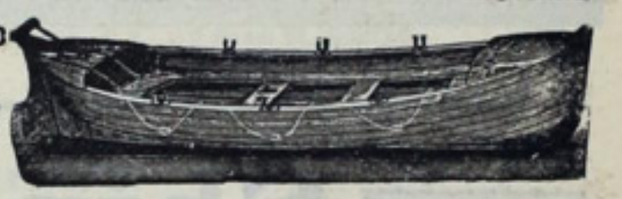

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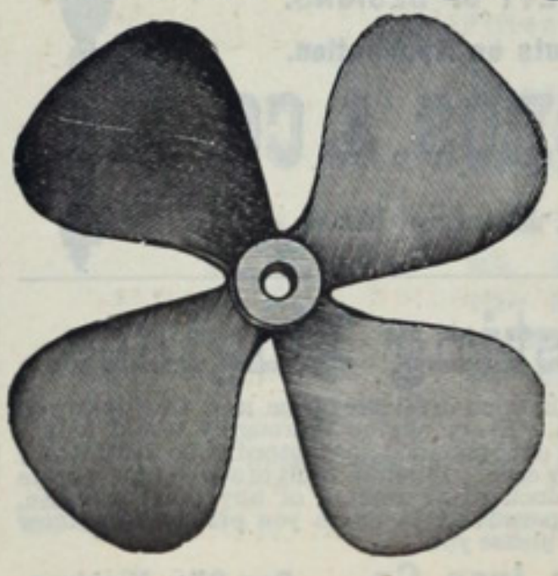

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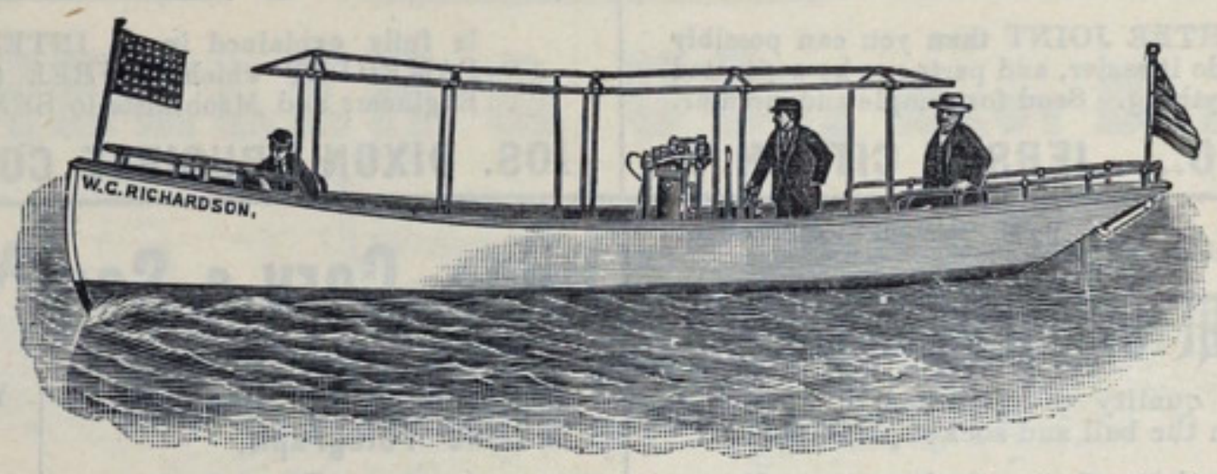

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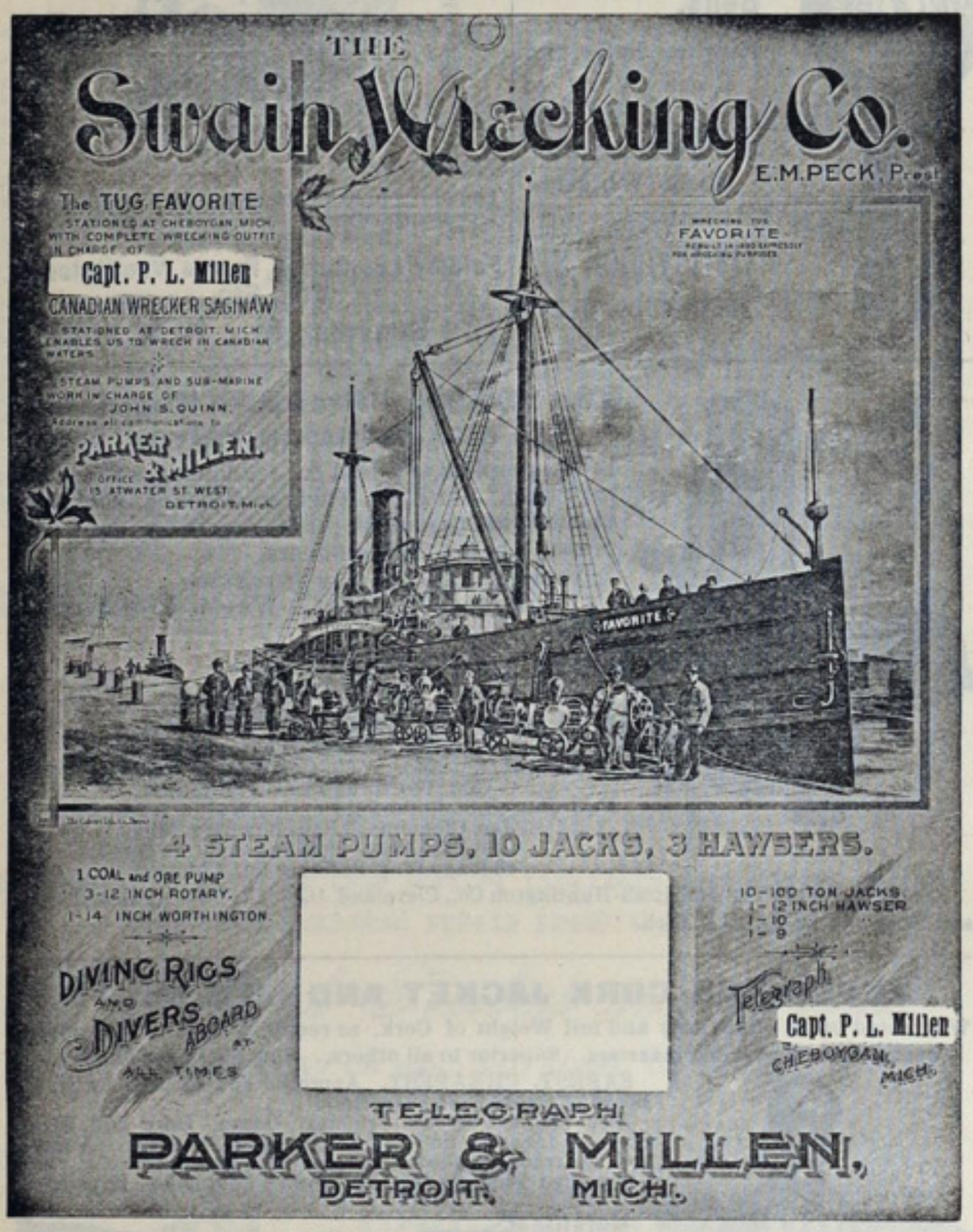

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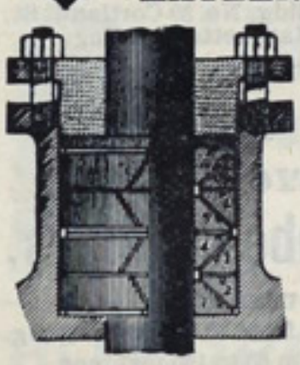

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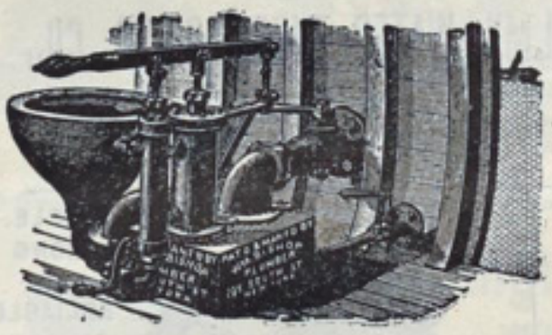

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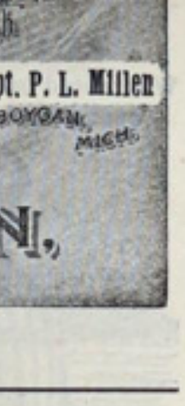

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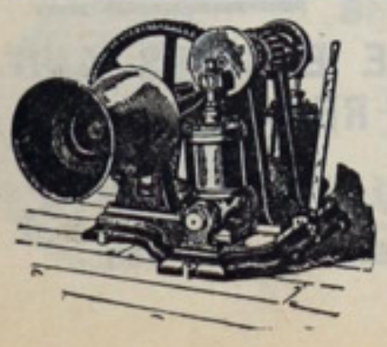

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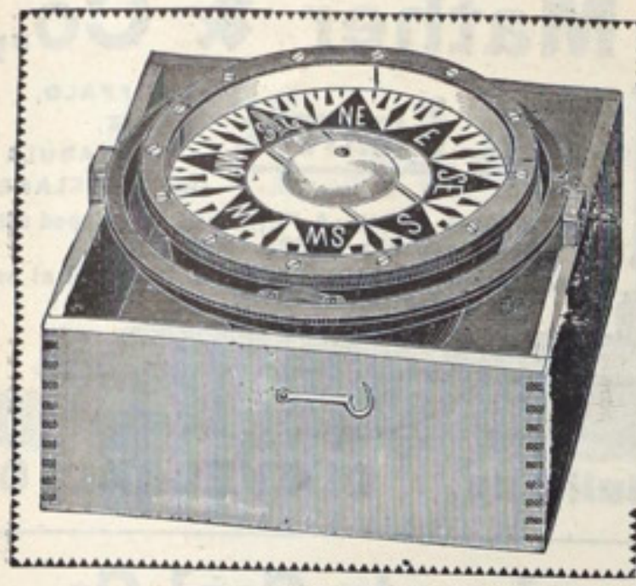

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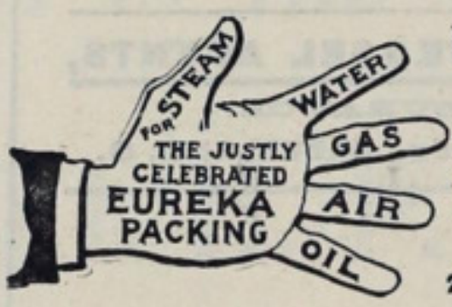

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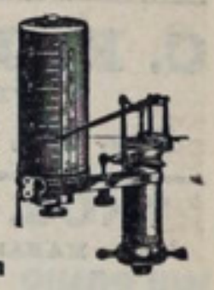

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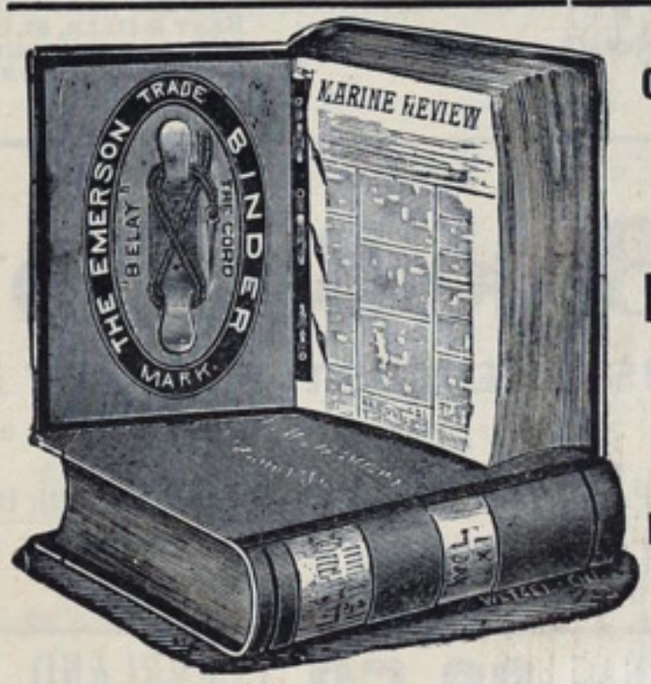

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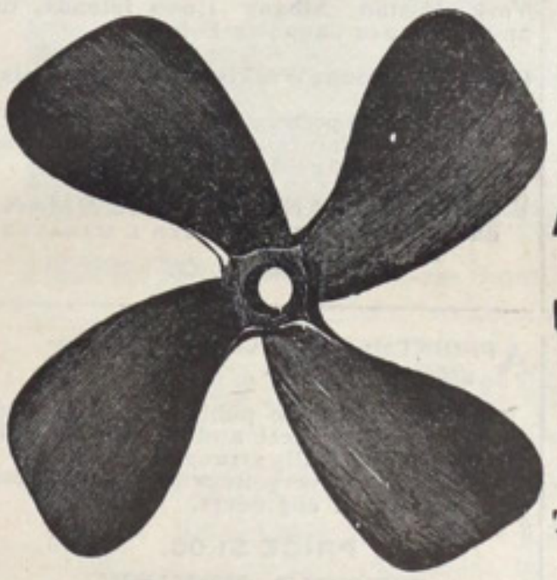

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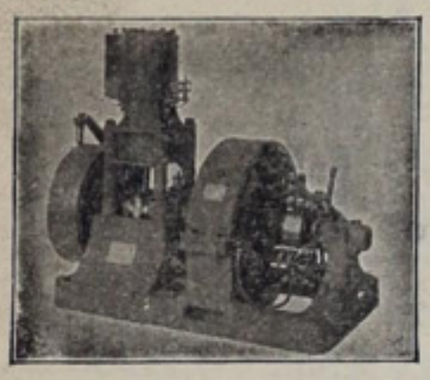

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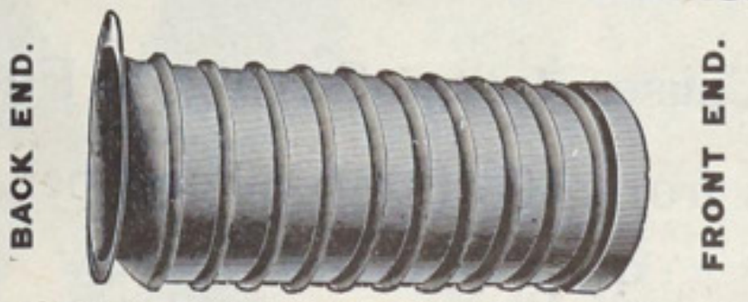

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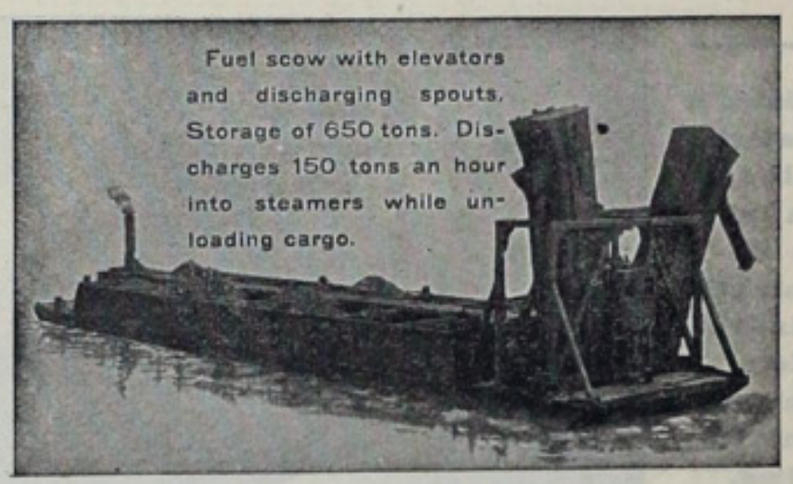
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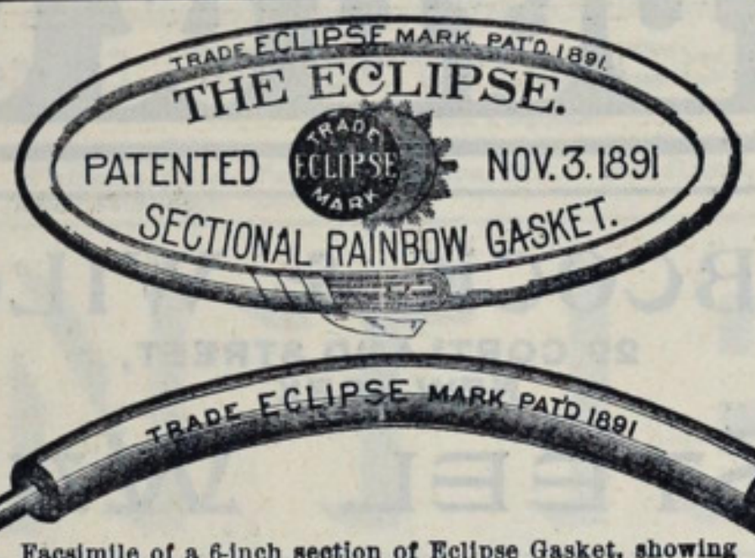

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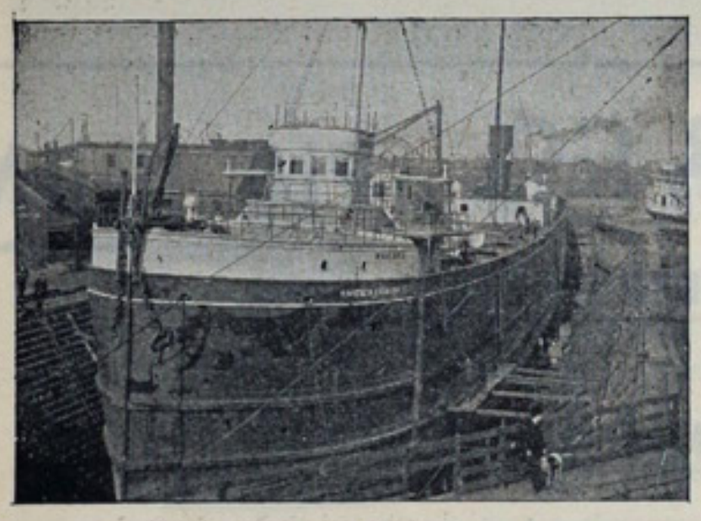

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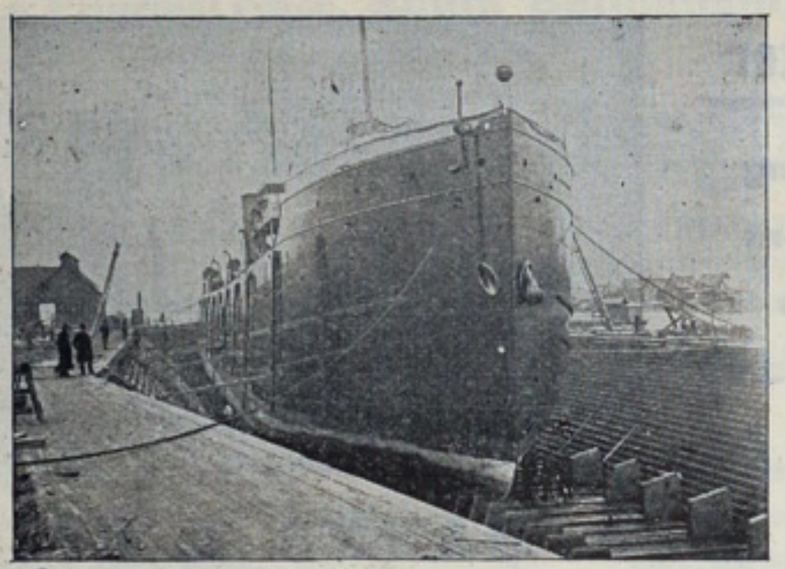

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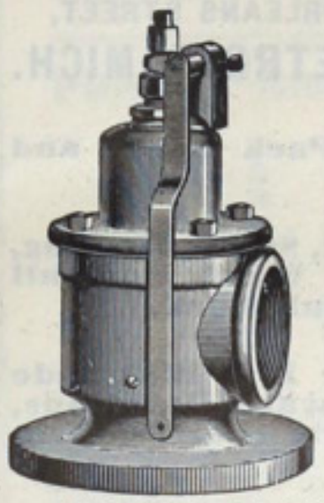

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